

REFERENCES

- AUSTIN, M.E. 1965. Land Resource Regions and Major Land Resource Areas of the United States (exclusive of Alaska and Hawaii). Agriculture Handbook 296. Soil Conservation Service, United States Department of Agriculture, Washington DC.
- BEATER, B.E. 1957. Soils of the Sugar Belt I. Natal North Coast. Oxford University Press, Cape Town (for University of Natal).
- BEATER, B.E. 1959. Soils of the Sugar Belt II. Natal South Coast. Oxford University Press, Cape Town (for University of Natal).
- BEATER, B.E. 1962. Soils of the Sugar Belt III. Zululand. Oxford University Press, Cape Town (for University of Natal).
- BEATER, B.E. 1970. Soil series of the Natal Sugar Belt. The South African Sugar Association, Durban.
- BECKET, P.H.T. and WEBSTER, R. 1971. Soil variability: A review. *Soils Fert.* 34:1-15.
- BESTER, H.C. 1993. Mobility and phytotoxicity of boron in two Highveld soils. M. Sc. thesis. Dept. of Agronomy, Univ. of Natal, Pietermaritzburg.
- BESTER, H.C. and LIENGME, D.P. 1993. Irrigation suitability survey of a portion of the grounds of the Drakensberg Sun Hotel, Estcourt District, Natal. ISCW Report No. GW/A/93/33. Institute for Soil, Climate and Water, Pretoria.
- BEYTELL, J.F. and SCHOONWINKEL, D. 1993. Grond opname van die plaas Bloupoort, Bronkhorstspuit. ISCW Report No. GW/A/93/33. Institute for Soil, Climate and Water, Pretoria.
- BRUNT, J. AND VAN REEUWIJK, L.P. 1995. SOILIMS: Laboratory Information and Management System for Soil and Plant Laboratories. Manual and Tutor. Version 1.3. International Soil Information and Reference Centre. Wageningen, The Netherlands.
- BÜHMANN, C., KIRSTEN, W.F.A., PATERSON, D.G. and SOBCZYK, M.E. 1993. Pedogenic differences between two different adjacent basalt derived soil profiles 1. Textural and chemical characteristics. *S. Afr. J. Plant Soil* 10:155-161.
- BURGESS, T.M. and WEBSTER, R. 1980a. Optimal interpolation and isarithmic mapping of soil properties: 1 The semi-variogram and punctual kriging. *J. Soil Sci.* 31:315-331.
- BURGESS, T.M. and WEBSTER, R. 1980b. Optimal interpolation and isarithmic mapping of soil properties: 2 Block kriging. *J. Soil Sci.* 31:333-341.
- BURROUGH, P.A. 1991. Sampling Designs for quantifying map unit composition. In *Spatial Variabilities of Soils and Landforms*. Mausbach, M.J. and Wilding, L.P. (Eds.) SSSA Special

Publication No. 28. Soil Sci. Soc. Am., Madison, Wisconsin.

BURROUGH, P.A., MACMILLAN, R.A. and VAN DEUSEN, W. 1992. Fuzzy classification methods for determining land suitability from soil profile observations and topography. *J. Soil Sci.* 43:193-210.

BURROUGH, P.A., VAN GAANS, P.F.M. and HOOTSMAN, R. 1997. Continuous classification in soil survey: spatial correlation, confusion and boundaries. *Geoderma* 77:115-135.

BORLAND dBASE IV. 1993. dBASE IV Version 2.0 for DOS. Borland International Inc. Scotts Valley, California.

BORLAND QUATTRO PRO. 1993. Quattro Pro Version 5.0 for Windows. Borland International Inc. Scotts Valley, California.

BOTHA, G.A., SCOTT, L., VOGEL, J.C. and VON BRUNN, V. 1992. Palaeosols and palaeoenvironments during the Late Pleistocene hypothermal in Northern Natal. *S. Afr. J. Sci.* 88:508-512.

CANADA SOIL SURVEY COMMITTEE, 1978. Soil Family and Series. In *The Canadian System of Soil Classification*. Canada Dept. Agric. Publ. 1646, Supply and Services, Ottawa, Ontario.

COREL CORPORATION LIMITED, 1997. Corel Draw 8, Corel Corporation Limited, Ottawa, Canada.

DEKKER, D.A., JEFFREY, R.A. and SCOTNEY, D.M. 1980. Soil survey of the Tala Valley area. Report No. 11/1980. Natal Region, Dept. of Agriculture and Fisheries, Pietermaritzburg.

DEMAREST, M. 1992. Grond opname van die plaas Roodekopjies. ISCW Report No. GW/A/92/5. Institute for Soil, Climate and Water, Pretoria.

DENT, M.C., LYNCH, S.D. and SCHULZE, R.E. 1988. Mapping mean annual and other rainfall statistics over Southern Africa. WRC Report No. 109/89 (plus maps). Water Research Commission, Pretoria.

DE VILLIERS, J.M. 1962. A study of soil formation in Natal. PhD Thesis, Univ. of Natal, Pietermaritzburg.

DE VILLIERS, J.M. 1964. The genesis of some Natal soils. I. Clovelly, Kranskop and Balmoral series. *S. Afr. J. Agric. Sci.* 7:417-438.

DE VILLIERS, J.M. 1965. The genesis of some Natal soils. II. Estcourt, Avalon, Bellevue and Rensburgspruit series. *S. Afr. J. Agric. Sci.* 8:507-524.

DOHSE, T.E. 1970. Pedology of selected soils in the central Orange Free State. M.Sc. Agric. Thesis. Univ. of the Orange Free. State, Bloemfontein.

DRENNAN, MAUD AND PARTNERS. 1988a. A soil survey of the Macekane Irrigation Scheme. Drennan, Maud and Partners, Durban.

DRENNAN, MAUD AND PARTNERS. 1988b. A soil survey of the Mtengu Irrigation Scheme. Drennan, Maud and Partners, Durban.

DUVENHAGE, A.J., LAKER, M.C. and TURNER, D.P. 1992. 'n Vergelyking tussen twee gronde van die Avalon Grondvorm met die oog op seriedifferensiasie. Proc. 17th Soil Sci. Soc. S. Afr. Congress. Stellenbosch.

ENGLUND, E. and SPARKS, A. 1988. GEO-EAS users guide. Environmental Monitoring Systems Lab., Office of Research and Development, EPA, Las Vegas, NV. (See Burrough, 1991. Statistical system for use in soils attributes.)

FAO-UNESCO. 1988 Soil Map of the World: Revised Legend. FAO World Soil Resources Report 60, Rome, Italy.

GEERS, B.C. and DOHSE, T.E. 1980. Reconnaissance soil survey of parts of the Mfolozi River Catchment. SIRI Report No. 954/154/80. Soil and Irrigation Research Institute, Pretoria.

GEERS, B.C., DOHSE, T.E. and SCHOEMAN, J.L. 1981. Verkenningsgrondopname van die Laër Krokodilvallei. SIRI Report No. 903/21/79. Soil and Irrigation Research Institute, Pretoria.

GEOLOGICAL SURVEY. 1970. Geological map of the Republic of South Africa and the Kingdoms of Lesotho and Swaziland. (1: 1 000 000) Geological Survey S. Afr., Pretoria.

GEOLOGICAL SURVEY. 1978. 1:250 000 Geological Series 2528 Pretoria. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1981a. 1:250 000 Geological Series 2928 Drakensberg. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1981b. 1:250 000 Geological Series 3028 Kokstad. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1984. Geological map of the Republics of South Africa, Transkei, Bophuthatswana, Venda and Ciskei and the Kingdoms of Lesotho and Swaziland. (1: 1 000 000) Geological Survey S. Afr., Pretoria.

GEOLOGICAL SURVEY. 1985a. 1:250 000 Geological Series 2632 Kosibaa. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1985b. 1:250 000 Geological Series 271/232 St. Lucia. Geological

Survey, Pretoria.

GEOLOGICAL SURVEY . 1985c. 1:250 000 Geological Series 2330 Tzaneen. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1986a. 1:250 000 Geological Series 2430 Pilgrims Rest. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1986b. 1:250 000 Geological Series 2530 Barberton. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1986c. 1:250 000 Geological Series 2630 Mbabane. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1986d. 1:250 000 Geological Series 2628 East Rand. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1988a. 1:250 000 Geological Series 2730 Vryheid. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1988b. 1:250 000 Geological Series 2828 Dundee. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1988c. 1:250 000 Geological Series 2930 Durban. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1988d. 1:250 000 Geological Series 3030 Port Shepstone. Geological Survey, Pretoria.

GEOLOGICAL SURVEY. 1992. 1:250 000 Geological Series 2728 Frankfort. Geological Survey, Pretoria.

GRUNDLING, H., GORDON, D.H and SMITH-BAILLIE, A.L. 1986. Verkenning grondopname van die Pongolariviergebied tussen Lachkraal en Bendor. SIRI Report No. GB/A/86/32. Soil and Irrigation Research Institute, Pretoria.

HALLMARK, C.T., WEST, L.T., WILDING, L.P. and DREES, L.R. 1986. Characterization data for selected Texas soils. Texas Agricultural Experiment Station, College Station, Texas.

HARTUNG, S.L., SCHEINOST, S.A. and AHRENS, R.J. 1991. Scientific method of the National Cooperative Soil Survey. In Spatial Variabilities of Soils and Landforms. Mausbach, M.J. and Wilding, L.P. (Eds.) SSSA Special Publication No. 28. Soil Sci. Soc. Am., Madison, Wisconsin.

HEWITT, A.E. and VAN WAMBEKE, A. 1985. The error taxadjunct and its application in soil taxonomic assignment. Soil Sci. Soc. Am. J. 49:952-956.

IDESSA-ISRIC. 1994. Soil reference profiles of Cote d' Ivoire. Field and analytical data. Country Report 4. (van Kekem A. and van de Ven, T. Compilers) International Soil Information and Reference Centre, Wageningen, The Netherlands and Idessa Institut des Savannes, Bouake, Cote d' Ivoire.

INTERNATIONAL SOIL REFERENCE AND INFORMATION CENTRE (ISRIC). 1993. Global and National Soils and Terrain Digital Databases (SOTER): Procedures Manual. (van Engelen, V.W.P. et al. Eds.) ISRIC, Wageningen, The Netherlands.

ISRIC. 1994. Soil reference profiles of Zambia. Field and analytical data. Country Report 13. (van Baren J.H.V. and Spaargaren, O.C. Compilers.) International Soil Information and Reference Centre, Wageningen, The Netherlands.

INTERNATIONAL SOCIETY OF SOIL SCIENCE, INTERNATIONAL SOIL REFERENCE AND INFORMATION CENTRE, FOOD AND AGRICULTURE ORGANIZATION (ISSS, ISRIC, FAO) 1998. World Reference Base for Soil Resources. FAO. Rome.

JEFFREY, R.A. and SCOTNEY, D.M. 1979. Soil survey of the Muden irrigation area. Report No. N13/1979. Natal Region, Dept. of Agriculture and Fisheries, Pietermaritzburg.

JEFFREY, R.A., DEKKER, D.A. and SCOTNEY, D.M. 1981. Soil survey of the False Bay-Hluhluwe area. Report No. N6/1981. Natal Region, Dept. of Agriculture and Fisheries, Pietermaritzburg.

KAUFFMAN, J. H. 1995. Progress of national soil reference collections and databases (NASREC) 1980-1995. In Proceedings of Workshop on National Soil Reference Collections and Databases (NASREC), 6-17 November 1995. (Volume 1, Spaargaren, O.C. Ed). International Soil Information and Reference Centre, Wageningen, The Netherlands.

KAUFFMAN, J. H., MANTEL, S. and SPAARGAREN, O.C. 1995. Soils of the humid and seasonally dry (sub)tropics: a correlation of reference data and their assessment for agriculture using the ISIS database. In Proceedings of Workshop on National Soil Reference Collections and Databases (NASREC), 6-17 November 1995. (Volume 2, Spaargaren, O.C. Ed). International Soil Information and Reference Centre, Wageningen, The Netherlands.

JENNY, H.F. 1941. Factors of soil formation. McGraw Hill, New York.

KING, L.C. 1940. The monocline coast of Natal. J. Geomorph. 3:144-153.

KING, L.C. and KING, L.A. 1959. A reappraisal of the Natal monocline. S. Afr. Geogr. J. 41:15-30.

KRUGER, G.P. 1983. Terrain morphological map of Southern Africa. Soil and Irrigation Research Institute, Pretoria.

LAND TYPE SURVEY STAFF. 1972-1991. Land Type Survey: Soil analyses reports for the

soil series identification profiles in KwaZulu-Natal and Mpumalanga. Institute for Soil, Climate and Water, Pretoria.

LAND TYPE SURVEY STAFF. 1985. Land types of the map 2628 East Rand and 2630 Mbabane. Mem. agric. nat. Resour. S. Afr. No. 5. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1986a. Land types of the map 2632 Mkuze. Mem. agric. nat. Resour. S. Afr. No. 6. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1986b. Land types of the map 2730 Vryheid. Mem. agric. nat. Resour. S. Afr. No. 7. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1987a. Land types of the maps 2526 Rustenburg and 2528 Pretoria. Mem. agric. nat. Resour. S. Afr. No. 8. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1987b. Land types of the maps 2426 Thabazimbi and 2428 Nylstroom. Mem. agric. nat. Resour. S. Afr. No. 10. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1987c. Land types of the map 2830 Richards Bay. Mem. agric. nat. Resour. S. Afr. No. 11. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1989a. Land types of the maps 2330 Tzaneen and 2430 Pilgrims Rest. Mem. agric. nat. Resour. S. Afr. No. 12. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1989b. Land types of the map 2530 Barberton. Mem. agric. nat. Resour. S. Afr. No. 13. Department of Agriculture and Water Supply, Pretoria.

LAND TYPE SURVEY STAFF. 1991. A procedure for describing soil profiles. SIRI Report No GB/A/ 91/67. Soil and Irrigation Research Institute, Pretoria.

LAND TYPE SURVEY STAFF. 1994a. Land types of the map 2930 Durban. Mem. agric. nat. Resour. S. Afr. No. 17. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF. 1994b. Land types of the map 3030 Port Shepstone. Mem. agric. nat. Resour. S. Afr. No. 21. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF. 1996. Land types of the map 2928 Drakensberg. Mem. agric. nat. Resour. S. Afr. No. 25. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF. 1997a. Land types of the maps 2728 Frankfort and 2828 Harrismith. Mem. agric. nat. Resour. S. Afr. No. 28. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF. 1997b. Land types of the map 3028 Kokstad. Mem. agric. nat. Resour. S. Afr. No. 31. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF. 1998a. Land types of the maps 3026 Aliwal North and 3126 Queenstown. Mem. agric. nat. Resour. S. Afr. No. 27. Institute for Soil, Climate and Water, Agricultural Research Council, Pretoria.

LAND TYPE SURVEY STAFF, 1998b. Land Type Survey Database for KwaZulu-Natal and Mpumalanga; Electronic version. Institute for Soil, Climate and Water, Pretoria.

LE ROUX J. and SCOTNEY D.M. 1970. A key to the Soils of Natal. Department of Agricultural Technical Services. Pretoria.

LOW, A.B. and REBELO, A.G. (Eds.) 1996. Vegetation of South Africa, Lesotho and Swaziland. A companion to the vegetation map of South Africa, Lesotho and Swaziland. Department of Environment Affairs and Tourism, Pretoria.

LOXTON, R.F. 1962. Soil survey of Kroonstad. Technical Communication No. 15. Dept. Agric. Tech. Serv., Pretoria.

LOXTON, R.F., HUNTING AND ASSOCIATES. 1967. Soil Classification Project: Eastern Transvaal Highveld. Classification and Description of Soil Series. (First Edition). R.F. Loxton, Hunting and Associates, Johannesburg.

LOXTON, R.F., HUNTING AND ASSOCIATES. 1970a. Soil Classification Project: Eastern Transvaal Highveld. Classification and Description of Soil Series. (Revised Edition). R.F. Loxton, Hunting and Associates, Johannesburg.

LOXTON, R.F., HUNTING AND ASSOCIATES. 1970b. Soil Classification Project: North Western Orange Free State. Classification and Description of Soil Series. R.F. Loxton, Hunting and Associates, Johannesburg.

LOXTON, R.F., HUNTING AND ASSOCIATES. 1970c. Soil Classification Project: Western Transvaal Highveld. Classification and Description of Soil Series. R.F. Loxton, Hunting and Associates, Johannesburg.

LOXTON, R.F., HUNTING AND ASSOCIATES. 1981. Mahlabatini Rural Development Project: Soils and land capability legend. R.F. Loxton Hunting and Associates. Johannesburg.

LOXTON, R.F. and MACVICAR, C.N. 1965. The soil series in relation to agricultural research and land use planning. Proc. 37th Annual Congress, South African Sugar Technologists'

Association, Mount Edgecombe, South Africa.

LUDICK, B.P. 1992. Voorgestelde handeling vir die omskrywing van grondliggame asook gewas- en veldekotope in die landtipes van die Hoëveldstreek. Technical Communication No. 236. Dept. of Agricultural Development, Pretoria.

LUDORF, R. and SCOTNEY, D.M. 1975. Soils of the Lions River and Mooi River Soil Conservation Districts. Tech. Communication No. 94. Dept. of Agric. Tech. Serv., Pretoria.

MACVICAR, C.N. 1965. The constitution and genesis of four soil series from dolerite in the Natal Midlands. S. Afr. J. Agric. Sci. 8:979-990.

MACVICAR, C.N. 1969. A basis for the classification of soil. J. Soil Sci. 20:141-152.

MACVICAR, C.N. 1973. Soils of the sugar industry. Bull. No. 19. S. Afr. Sugar Experiment Station, Mount Edgecombe.

MACVICAR, C.N. 1978. Advances in soil classification and genesis in Southern Africa. 8th Congress Soil Sci. Soc. S. Afr. Technical Communication No. 165, Dept. Agric. Tech. Serv., Pretoria.

MACVICAR, C.N., DE VILLIERS, J.M., LOXTON, R.F., VERSTER, E., LAMBRECHTS, J.J.N., MERRYWEATHER, F.R., LE ROUX, J., VAN ROOYEN, T.H. AND HARMSE, H.J. VON M. 1977. Soil Classification: A Binomial System for South Africa. Dept. of Agricultural Technical Services, Pretoria.

MACVICAR, C.N., FITZPATRICK, R.W. and SOBCZYK, M.E. 1984. Highly weathered soils in the east coast hinterland of Southern Africa with thick, humus-rich A1 horizons. J. Soil Sci. 35:103-115.

MACVICAR, C.N. and LOXTON, R.F. 1967. Soils of the Langkloof. Tech. Comm. No. 59, Dept. Agric. Tech. Serv., Pretoria.

MACVICAR, C.N., LOXTON, R.F. and VANDER EYK, J.J. 1965a. South African Soil Series. Part I: Definitions and key. Dept. of Agricultural Technical Services, Pretoria.

MACVICAR, C.N., LOXTON, R.F. and VANDER EYK, J.J. 1965b. South African Soil Series. Part II: Profile descriptions and analytical data. Dept. of Agricultural Technical Services, Pretoria.

MACVICAR, C.N. and PERFECT, G.A. 1971. The soils of the Eastern Transvaal sugar industry. Proc. 42nd Annual Congress, South African Sugar Technologists' Association, Mount Edgecombe, South Africa.

MACVICAR, C.N. and SOBCZYK, M.E. 1984. Humic-melanic investigation. SIRI Report No. GW/A/99/123. Soil and Irrigation Research Institute, Pretoria.

MAUD, R.R. 1968. Quaternary geomorphology and soil formation in coastal Natal. *Z. Geomorph. N.S. Suppl.* 7 :155-199.

MAZAHERI, S.A., KOPPI, A.J. and MCBRATNEY, A.B. 1995. A fuzzy allocation scheme for the Australian Great Soil Groups classification system. *Eur. J. Soil Sci.* 46:601-612.

MAZAHERI, S.A. MCBRATNEY, A.B. and KOPPI, A.J. 1997. Sensitivity of membership to attribute variation around selected centroids and intergrades in the continuous Australian Great Soil Groups classification system. In *Fuzzy Sets in Soil Science*. De Gruijter, J.J., McBratney, A.B. and McSweeney, K. (Eds.), *Geoderma* 77:155-168.

MCBRATNEY, A.B. and ODEH, I.O.H. 1997. Application of fuzzy sets in soil science: fuzzy logic, fuzzy measurement and fuzzy decisions. In De Gruijter, J.J., McBratney, A.B. and McSweeney, K. (Eds.), *Fuzzy Sets in Soil Science*. *Geoderma* 77:85-113.

MEYER, J.H., VAN ANTWERPEN, R. and MEYER, E. 1996. A review of soil degradation and management research under intensive sugarcane cropping. *Proc. S. Afr. Sug. Technol. Ass.* 70:22-28.

NATURAL RESOURCE CONSERVATION SERVICE STAFF. 1993. *Field Office Technical Guide*; Howard County, Indiana. United States Department of Agriculture, Indiana.

NETTLETON, W.D., BRASHER, B.R. and BORST, G. 1991. The taxadjunct problem. *Soil Sci. Soc. Am. J.* 55:421-427.

NIELSEN, D.R., BIGGER, J.W. and ERH, K.T. 1973. Spatial variability of field-measured soil water properties. *Hilgardia* 42:215-259.

NON-AFFILIATED SOIL ANALYSIS WORKING GROUP (NASAWG). 1990. *Handbook of Standard Soil Testing Methods for Advisory Purposes*. Soil Science Society of South Africa, Pretoria.

OBERHOLSTER, R.E. 1969a. Genesis of two different soils on basalt 1. Mineralogical characteristics. *Agrochemphysica* 1:53-62.

OBERHOLSTER, R.E. 1969b. Genesis of two different soils on basalt 2. Contribution of transported material. *Agrochemphysica* 1:73-78.

ORCHARD, E.R. 1965. Pedological patterns of soil fertility. *Proc. S. Afr. Sugar Technol. Assoc.* 39:247-249.

PARTRIDGE, T.C. and MAUD, R.R. 1987. Geomorphic evolution of southern Africa since the Mesozoic. *S. Afr. J. Geol.* 90:179-208 (plus maps).

PATERSON, D.G. 1991a. Soil survey of a portion of the farm Bankfontein 216 near Witbank. ISCW Report No. GW/A/91/63. Institute for Soil, Climate and Water, Pretoria.

PATERSON, D.G. 1991b. Soil survey of a portion of the farm Nooitgedacht 300JS, near Witbank. ISCW Report No. GW/A/91/64. Institute for Soil, Climate and Water, Pretoria.

PATERSON, D.G. 1992a. Soil survey of Balmoral Colliery. ISCW Report No. GW/A/92/1. Institute for Soil, Climate and Water, Pretoria.

PATERSON, D.G. 1992b. Grondopname van Towoomba Proefplaas, Warmbad. ISCW Report No. GW/A/92/7. Institute for Soil, Climate and Water, Pretoria.

PIENAAR, M. 1998. Program listing of computer programs, Project GW50/008. ISCW Report No. GW/A/99/124. Institute for Soil, Climate and Water, Pretoria.

PLATH, B.L., VIVIAN, L.J. GRUNDLING, H., SMITH-BAILLIE, A.L. and DOHSE, T.E. 1982. Grondopname van die Nkwalini-, Mfuli- en Heatonvillebesproeiingsdistrikte, Eshowe-Empangeni, Natal. SIRI Report No. 967/430/80. Soil and Irrigation Research Institute, Pretoria.

POTGIETER, L.J.C. and WILKE, C. 1991. Grondopname van die plaas Elandsfontein, Bronkhorstspuit. ISCW Report No. GW/A/91/51. Institute for Soil, Climate and Water, Pretoria.

RIJKSUNIVERSITEIT UTRECHT. 1988. PC Geostat Manual. Internal Publication. Dept Physical Geography, The Netherlands.

ROBERTS, V.E. 1969. Soil survey of Bethlehem. Technical Communication No. 58. Dept. Agric. Tech. Serv., Pretoria.

SCHOEMAN, J.L. 1973. Die pedologie van die Grootspuit-opvanggebied, distrik Fouriesburg. M.Sc. Thesis. Univ. of Potchefstroom for CHE, Potchefstroom.

SCHOEMAN, J.L. 1989. Natural soil bodies of the Lichtenburg, Bothaville, Viljoenskroon and Wesselsbron areas and estimates of their water holding characteristics as derived from land type data. Technical Communication No. 219. Department of Agriculture and Water Supply, Pretoria.

SCOTNEY, D.M., JEFFREY, R.A. and DEKKER, D.A. 1978. Soil survey of the Kokstad-Cedarville area. Natal Region, Dept. of Agric. Tech. Serv., Pietermaritzburg.

SIMONSON, R.W. 1959. Outline of a generalized theory of soil genesis. Soil Sci. Soc. Am. Proc. 23:152-156.

SIMONSON, R.W. 1978. Soil survey and soil classification in the United States. Proc. 8th Congr. Soil Sci. Soc. S. Afr. Pietermaritzburg. Tech. Comm. No. 165. Dept. Agric. Tech. Serv., Pretoria.

SIMONSON, R.W. 1997. Evolution of Soil Series and Type Concepts in the United States. Advances in GeoEcology 29: 79-108. Catena Verlag, Reiskirchen, Germany.

SMITH, G.D. 1986. The Guy Smith Interviews: Rationale for Concepts in Soil Taxonomy. Soil Management Support Services Technical Monograph No.11, Soil Conservation Service, United States of Agriculture, Washington DC.

SMITH-BAILLIE, A.L., 1986a. Reconnaissance soil survey of the Lower Pongola River west of the J.G. Strijdom dam. SIRI Report No. GB/A/86/33. Soil and Irrigation Research Institute, Pretoria.

SMITH-BAILLIE, A.L., 1986b. Reconnaissance soil survey report of the Kamberg Nature Reserve. SIRI Report No. GB/A/86/35. Soil and Irrigation Research Institute, Pretoria.

SMITH-BAILLIE, A.L., BESTER, H.C. and LIENGME, D.P. 1991. Natal Soil Tour. ISCW Report No. GW/A/95/95. Institute for Soil, Climate and Water, Pretoria.

SMITH-BAILLIE, A.L. and DOHSE, T.E. 1975. Detail grondopname van die plase Bronkhorstfontein en Kogelfontein, Moeketsiegebied. SIRI Report No. 833/144/75. Soil and Irrigation Research Institute, Pretoria.

SMITH-BAILLIE, A.L., SNYMAN, K. PALLETT, R.N. GRUNDLING, H.G. and TURNER, D.P. 1989. Soil survey report of the Magudu, Lelieshoek and Nooitgedacht areas, Ngotshe District, Natal. SIRI Report No. GB/A/89/10. Soil and Irrigation Research Institute, Pretoria.

SNYMAN, K. 1987. The micromorphology of selected diagnostic horizons of the binomial system for soil classification. M. Sc thesis. Univ. of Natal, Pietermaritzburg.

SOHAN LAL, DESHPANDE, S.B. and SEHGAL, J. 1994. Soil Series of India. Soils Bulletin 40, National Bureau of Soil Survey and Land Use Planning. Nagpur, India.

SOIL CLASSIFICATION WORKING GROUP. 1991. Soil Classification: A Taxonomic System for South Africa. Dept. of Agricultural Development, Pretoria.

SOILSCAPES 93 ORGANISING COMMITTEE. 1993. Soil profiles of the Soilscales 93 Tour. ISCW Report No. GW/A/93/95. Institute for Soil, Climate and Water, Pretoria.

SOIL SURVEY STAFF. 1960. Soil Classification, A Comprehensive System. 7th Approximation. U.S. Dept. Agric. Soil Cons. Serv., Washington, D.C.

SOIL SURVEY STAFF. 1972. Soil series of the United States, Puerto Rico, and the Virgin Islands: Their Taxonomic Classification. (August, 1972). Soil Conservation Service, United States Department of Agriculture.

SOIL SURVEY STAFF. 1975. Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys. Agriculture Handbook No.436. Soil Conservation Service, U.S. Dept. Agric. Washington, D.C.

SOIL SURVEY STAFF. 1980. Soil Survey Manual. USDA-SCS Handbook 18. U.S. Govt.

Printing Office Washington, DC.

SOIL SURVEY STAFF. 1992. Keys to Soil Taxonomy, Fifty Edition, SMSS Technical Monograph No. 19, Pocahontas Press, Blacksburg, Virginia, USA.

SOIL SURVEY STAFF. 1996a. Keys to Soil Taxonomy, Seventh Edition. Natural Resources Conservation Service, United States Department of Agriculture. Washington DC.

SOIL SURVEY STAFF. 1996b. National Soil Survey Manual, Title 430-VI. Natural Resources Conservation Service, United States Department of Agriculture. Washington DC.

SOIL SURVEY STAFF. 1996c. Soil Laboratory Methods Manual, Soil Survey Investigations Report No. 42. Version 3.0. Natural Resources Conservation Service, United States Department of Agriculture. Washington DC.

SOIL SURVEY STAFF. 1998. Keys to Soil Taxonomy, Eighth Edition. Natural Resources Conservation Service, United States Department of Agriculture. Washington DC.

SOIL SURVEY STAFF. 1999. Soil Taxonomy: A Basic System of Soil Classification for Making and Interpreting Soil Surveys. Second Ed. Agriculture Handbook No 436. Natural Resources Conservation Service, United States Department of Agriculture, Washington DC.

SOUTH AFRICAN COMMITTEE FOR STRATIGRAPHY (SACS). 1980. Stratigraphy of South Africa. Part 1 (Comp. L.E. Kent). Lithostratigraphy of the Republic of South Africa, South West Africa/Namibia, and the Republics of Bophuthatswana, Transkei and Venda: Handb. geol. Surv. S. Afr. 8. Geological Survey, Pretoria.

STEENEKAMP, P.I. 1989. Detail grondopname van die plaas Sterkfontein 495JR. ISCW Report No. GW/A/91/46. Institute for Soil, Climate and Water, Pretoria.

TAYLOR, K.P. 1972. An investigation of the clay fraction of soils from the Springbok Flats, Transvaal. M.Sc. Thesis. Univ. of Natal. Pietermaritzburg.

TRUSWELL, J.F. 1977. The geological evolution of South Africa. Purnell. Cape Town.

TURNER, D.P. 1976. A study of water infiltration into soils. Dept. of Soil Science and Agrometeorology, Univ. of Natal, Pietermaritzburg.

VAN DER BANK, W.J. 1968. Bodemopname van Lichtenburg. Technical Communication No. 58. Dept. Agric. Tech. Serv., Pretoria.

VAN DER BANK, W.J., VERSTER, E., ROBERTS, V.E., MACVICAR, C.N. 1978. Soil survey of Grootvlei. Technical Communication No. 145. Dept. Agric. Tech. Serv., Pretoria.

VAN DER EYK, J.J. 1965. Climate as a Soil forming factor in Natal. Proc. S. Afr. Sugar Technol. Assoc. 39:234-241.

VAN DER EYK, J.J., MACVICAR, C.N. and DE VILLIERS, J.M. 1969. Soils of the Tugela Basin. NTRP Planning Reports Vol. 15, Natal Town and Regional Planning Commission, Pietermaritzburg.

VAN MEIRVENNE, M., SCHELDEMAN, K. BAERT, G. HOFMANG. 1994. Quantification of Soil texture of Bas-Zaire using Soil map polygons and/or point observations. *Geoderma* 62:69-82.

VAN REEUWIJK, L.P. 1967. Pedogenic and clay mineralogical studies : I. Genesis of textural lamella in some subtropical sand soils. II. Properties of synthetic and natural amorphous aluminosilicates. M.Sc(Agric) thesis, University of Natal, Pietermaritzburg.

VAN WAMBEKE, A. and FORBES, T.R. 1986. Guidelines for using "Soil Taxonomy" in the names of soil map units. Soil Management Support Services Technical Monograph No.10, Soil Conservation Service, United States of Agriculture, Washington DC.

VENTER, F.J. 1990. A Classification of Land for Management Planning in the Kruger National Park. PhD Thesis. Univ. of South Africa. Pretoria.

VENTER, G.H.C., FOLSCHER, W.J. and OBERHOLSTER, R.E. 1969. Gronde van die Nooitgedacht-navorsingstasie. Tech. Communication No. 61. Dept. of Agric. Tech. Serv., Pretoria.

VERSTER, E. 1971. Soil survey of Makwassie. Technical Communication No. 56. Dept. Agric. Tech. Serv., Pretoria.

VERSTER, E. 1972. Konsepte, tegnieke en prosedures vir die globale hulpbronopname (grond). Report No. 154/73/784. Soil and Irrigation Research Institute, Pretoria.

VERSTER, E. 1973. Bodemopname van Rustenburgomgewing. Technical Communication No. 103. Dept. Agric. Tech. Serv., Pretoria.

WEBSTER, R. 1985. Quantitative spatial analysis of Soil in the field. *Adv. Soil Sci.* 3:1-70.

WEBSTER, R. 1994. The development of Pedometrics. *Geoderma* 62:1-15.

WEBSTER, R. and OLIVER, M.A. 1990. Statistical methods in Soil and land resource survey. Oxford University Press, Oxford.

WILDING L.P., and DREES, L.R. 1983. Spatial Variability and Pedology. In Wilding, L.P., Smeck, N.E. and Hall, G.F. (Eds.) *Pedogenesis and Soil Taxonomy. I. Concepts and Interactions.* Elsevier Science Publishers, Amsterdam. pp 83-116.

YOUNG, F.J., MAATTA, J.M. and HAMMER, R.D. 1991. Confidence intervals for Soil properties within map units. In *Spatial Variabilities of Soils and Landforms.* Mausbach, M.J. and Wilding, L.P. (Eds.) SSSA Special Publication No. 28. Soil Sci. Soc. Am., Madison, Wisconsin.