

Bibliography

- Analytical Spectral Devices. (2002) *Spectroradiometers/FieldSpec Pro Specs*. URL: http://www.asdi.com/asdi_t2_pr_sp_fsp_s.html. April 7.
- Arp J. (2002) Personal Communication. *Discussion on radiance and reflectance calibration for IKONOS imagery*. January 28.
- Asner G.P. (1998) Biophysical and biochemical sources of variability in canopy reflectance. *Remote Sensing of Environment*, 64, 234-253.
- Asrar G., Myneni, R. B., and Kanemasu, E. T. (1989) Estimation of plant-canopy attributes from spectral reflectance measurements. *Theory and Applications of Optical Remote Sensing*. Eds. Asrar, G. pp. 14-65. John Wiley and Sons, New York.
- Barber G., (1988) *Elementary Statistics for Geographers*. The Guilford Press, New York.
- Barber G. (2002) Personal Communication. *Linear Regression Discussion*. February 20.
- Barbour M.G., Burk, J. H., and Pitts, W. D. (1987) *Terrestrial Plant Ecology*. The Benjamin/Cummings Publishing Company, Inc., Menlo Park. Second Edition.
- Baret F., and Guyot, G. (1991) Potentials and Limits of Vegetation Indices for LAI and APAR Assessment. *Remote Sensing of Environment*, 35, 161-173.
- Bliss L.C., and Matveyeva, N. V. (1992) Circumpolar Arctic Vegetation. *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin S.F., Jeffries, R.L., Reynolds, J.F., Shaver, G.R. Svoboda, J., and Chu, E.W.), pp. 59-89. Academic Press, Inc., San Diego.
- Bliss L.C., and Peterson, K. M. (1992) Plant Succession, Competition, and the Physiological Constraints of Species in the Arctic. In: *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin S.F., Jeffries, R.L., Reynolds, J.F., Shaver, G.R. Svoboda, J., and Chu, E.W.), pp. 111-136. Academic Press, Inc., San Diego.
- Boutton T.W., and Tieszen, L. L. (1983) Estimation of plant biomass by spectral reflectance in an east African grassland. *Range Management*, 36, 213-221.
- Box E.O., Holben, B. N., and Kalb, H. (1989) Accuracy of the AVHRR vegetation index as a predictor of biomass, primary productivity, and net CO₂ flux. *Vegetatio*, 80, 71-89.
- Brown J.H. (1984) On the Relationship Between Abundance and Distribution of Species. *The American Naturalist*, 124, 255-279.
- Burt P. (1991) *Barrenland Beauties - Shony Plants of the Arctic Coast*. The Northern Publishers, Yellowknife.

- Campbell J.B. (1996) *Introduction to Remote Sensing*. The Guilford Press, New York. Second Edition.
- Chapin S.F., Jefferies, R. L., Reynolds, J. F., Shaver, G. R., and Svoboda, J. (1992a) Arctic Plant Physiological Ecology: A Challenge for the Future. *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin, S. F., Jefferies, R. L., Reynolds, J. F., Shaver, G. R., Svoboda, J., and Chu, E. W. pp. 3-8. Academic Press, Inc., San Diego.
- Chapin S. F., Jeffries., R. L, Reynolds, J. F., Shaver, G. R., and Svoboda, J. (1992b) Arctic Plant Physiological Ecology in an Ecosystem Context. *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin S. F., Jeffries, R. L., Reynolds, J. F., Shaver, G. R. Svoboda, J., and Chu, E. W. pp. 441-451. Academic Press Inc., San Diego.
- Chapin S.F., Shaver, G. R., Giblin, A. E., Nadelhoffer, K. J., and Laundre, J. A. (1995) Response of arctic tundra to experimental and observed changes in climate. *Ecology Washington D.C.*, 76, 694-711.
- Dancy K.J., Webster, R., and Abel, N. O. J. (1986) Estimating and mapping grass cover and biomass from low-level photographic sampling. *International Journal of Remote Sensing*, 7, 1679-1704.
- Davidson A., and Csillag, F. (2001) The Influence of Vegetation Index and Spatial Resolution on a Two-Date Remote Sensing-Derived Relation to C4 Species Coverage. *Remote Sensing of Environment*, 75, 138-151.
- de Gruijter J. (1999) Spatial sampling schemes for remote sensing. *Spatial Statistics for Remote Sensing*. Eds. Stein, A. pp. 211-242. Kluwer Academic Publishers.
- Dey B., and Richards, J. H. (1981) The Canadian North: Utility of Remote Sensing for Environmental Monitoring. *Remote Sensing of Environment*, 11, 57-72.
- Dungan J.L. (1995) Geostatistical approaches for spatial estimation of vegetation quantities using ground and image data. *RSS 95: Remote Sensing in Action - Proceedings of the 21st annual conference*, pp. 947-954.
- Dyke A.S. (1984) Quaternary Geology of Boothia Peninsula and Northern District of Keewatin, Central Canadian Arctic. *Geological Survey of Canada*, pp. 1-26, Ottawa.
- Edlund S.A. (1991) Climate Change and its Effects on Canadian Arctic Plant Communities. In: *Arctic Environment: Past, Present, and Future*. Eds. Woo, M.K, and Gregor, D. J., pp. 121-135. McMaster University, Hamilton.
- Edwards E.J., Moody, A., and Walker, D. A. (2000) A Western Alaskan Transect to Examine Interactions of Climate, Substrate, Vegetation, and Spectral Reflectance. pp.58. University of Alaska-Fairbanks, Fairbanks, Alaska. June 22.

- ENVI. (2000) *Help Menu*. The Environment for Visualizing Images Software V. 3.4. Boulder, CO, USA.
- Environment Canada. (2000) *Boothia Peninsula Plateau*. URL <http://www.ec.gc.ca/soerree/English/Framework/NarDesc/Region.cfm?region=20>. April 12.
- Forbes A. (2001) Personal Communication. *Meteorological data for Boothia Peninsula 2001 field season*. February 13.
- Galvao L.S., Vitorello, I., and Pizarro, M. A. (2000) An adequate band positioning to enhance NDVI contrasts among green vegetation, senescent biomass, and tropical soils. *International Journal of Remote Sensing*, 21, 1953-1960.
- Gemmell F., and Varjo, J. (1999) Utility of Reflectance Model Inversion Versus Two Spectral Indices for Estimating Biophysical Characteristics in a Boreal Forest Test Site. *Remote Sensing of Environment*, 68, 95-111.
- Glaser P.H. (1992) Raised bogs in eastern North America - regional controls for species richness and floristic assemblages. *Journal of Ecology*, 80, 535-554.
- Goodall D.W. (1970) Statistical Plant Ecology. *Annual Review of Ecology and Systematics*, 1, 99-124.
- Goward S.N., Masek, J. G., Williams, D. L., Irons, J. R., and Thompson, R. J. (2001) The Landsat 7 mission - Terrestrial research and applications for the 21st century. *Remote Sensing of Environment*, 78, 3-12.
- Gower S.T., Kucharik, C. J., and Norman, J. M. (1999) Direct and Indirect Estimation of Leaf Area Index, f_{APAR} , and Net Primary Production of Terrestrial Ecosystems. *Remote Sensing of Environment*, 70, 29-51.
- Hair J.F.J., Anderson, R. E., Tatham, R. L., and Black, W. C. (1998) *Multivariate Data Analysis*. Prentice Hall, New Jersey. Fifth Edition.
- Hansen B.U. (1991) Monitoring natural vegetation in southern Greenland using NOAA AVHRR and field measurements. *Arctic*, 44, 94-101.
- Henry G. (1998) Environmental influences on the structure of sedge meadows in the Canadian High Arctic. *Plant Ecology*, 134, 119-129.
- Hoekstra T.W., Allen, T. F. H., and Flather, C. H. (1991) Implicit Scaling in Ecological Research. *Bioscience*, 41, 148-154.
- Hope A.S., Fleming, J. B., Vourlitis, G., Stow, D. A., Oechel, W. C., Hack, T. (1995) Relating CO₂ fluxes to spectral vegetation indices in tundra landscapes: importance of footprint definition. *Polar Record*, 31, 245-250.

- Hope A.S., Kimball, J. S., and Stow, D. A. (1993) The relationship between tussock tundra spectral reflectance properties and biomass and vegetation composition. *International Journal of Remote Sensing*, 14, 1861-1874.
- Huete A.R. (1988) A Soil-Adjusted Vegetation Index (SAVI). *Remote Sensing of Environment*, 25, 295-309.
- Jacobs J.D. (1991) Science and Change in Northern Canada. *Common Ground: Northern Peoples and the Environment*. Eds. Jacobs, J.D, and Montevecchi, W. A., pp. 1-8. Institute of Social & Economic Research, Memorial University, Memorial University, St. John's, Newfoundland.
- Jacobsen A., and Hansen, B. U. (1999) Estimation of the soil heat flux/net radiation ratio based on spectral vegetation indexes in high-latitude Arctic areas. *International Journal of Remote Sensing*, 20, 445-461.
- Jelinski D.E. (2001) Personal Communication. *Sampling Strategy Discussion*. May 8.
- Jelinski D.E., and Wu, J. (1996) The modifiable areal unit problem and implications for landscape ecology. *Landscape Ecology*, 11, 129-140.
- Jensen J.R. (1996) *Introductory Digital Image Processing - A Remote Sensing Perspective*. Prentice Hall, New Jersey.
- Jensen J.R. (2000) *Remote Sensing of the Environment - An Earth Resource Perspective*. Prentice Hall, New Jersey.
- Laidler G.J. (2001) *Investigations into Arctic Tundra Vegetation Ecology and Appropriate Sampling Methods*. Unpublished report, pp. 81. Queen's University, Kingston.
- Laidler G.J., and Treitz, P.M. (2001) Biophysical Remote Sensing of Arctic Environments. *Progress in Physical Geography*, in press.
- Larsen J.A. (1964) The Role of Physiology and Environment in the Distribution of Arctic Plants. pp. 70. University of Wisconsin.
- Lévesque E. (1996) Minimum Area and Cover-Abundance Scales as Applied to Polar Desert Vegetation. *Arctic and Alpine Research*, 28, 156-162.
- Lévesque E. (2001) Personal Communication. *Biomass drying methods*. September 13.
- Lloyd A.H., Armbruster, S. W., and Edwards, M. E. (1994) Ecology of a steppe-tundra gradient in interior Alaska. *Journal of Vegetation Science*, 5, 897-912.
- Lobo A., Moloney, K., Chic, O., and Chiariello, N. (1998) Analysis of fine-scale spatial pattern of a grassland from remotely-sensed imagery and field collected data. *Landscape Ecology*, 13, 111-131.

- Longton R.E. (1997) The role of bryophytes and lichens in polar ecosystems. *Ecology of Arctic Environments*. Eds. Woodin, S.J., and Marquiss, M. pp. 69-96. Blackwell Science Limited, Oxford.
- McFadden J.P., Chapin, F. S., and Hollinger, D. Y. (1998) Subgrid-scale variability in the surface energy balance of arctic tundra. *Journal of Geophysical Research*, 103, 28,947-28,961.
- McMichael C.E., Hope, A. S., Stow, D. A., Fleming, J. B., Vourlitis, G, and Oechel, W. (1999) Estimating CO₂ exchange at two sites in Arctic tundra ecosystems during the growing season using a spectral vegetation index. *International Journal of Remote Sensing*, 20, 683-698.
- Merrill E.H., Branble-Brodahl, M. K., Marrs, R. W., and Boyce, M. S. (1993) Estimation of green herbaceous phytomass from Landsat MSS data in Yellowstone National Park. *Journal of Range Management*, 46, 151-157.
- Mosbech A., and Hansen, B. U. (1994) Comparison of satellite imagery and infrared aerial photography as vegetation mapping methods in an arctic study area; Jameson Land, East Greenland. *Polar Research*, 13, 139-152.
- Mueller-Dombois D., and Ellenberg, H. (1974) *Aims and Methods of Vegetation Ecology*. John Wiley & Sons, Toronto.
- Muller S.V., Racoviteanu, A. E., and Walker, D. A. (1999) Landsat MSS-derived land-cover map of northern Alaska: extrapolation methods and a comparison with photo-interpreted and AVHRR-derived maps. *International Journal of Remote Sensing*, 20, 2921-2946.
- Murray D.F. (1997) Regional and local vascular plant diversity in the Arctic. *Opera Botanica*, 132, 9-18.
- Nadelhoffer K.J., Giblin, A. E., Shaver, G. R., and Linkins, A. E. (1992) Microbial Processes and Plant Nutrient Availability in Arctic Soils. *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin S. F., Jeffries, R.L, Reynolds, J. F., Shaver, G. R., Svoboda, J., and Chu, E. W., pp. 261-300. Academic Press, Inc., San Diego.
- NASA (2002) *Landsat 7 - Science Data Users Handbook*. URL http://ltpwww.gsfc.nasa.gov/IAS/handbook/handbook_toc.html. January 14.
- Nemani R.R., and Running, S. W. (1995) Satellite Monitoring of Global Land Cover Changes and Their Impact on Climate. *Climatic Change*, 31, 395-413.
- Neter J., Kutner, M. H., Nachtsheim, C. J., and Wasserman, W. (1996) *Applied Linear Regression Models*. The McGraw-Hill Companies, Inc., Chicago. Third Edition.

- Oberbauer S.F., and Dawson, T. E. (1992) Water-Relations of Arctic Vascular Plants. In: *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin S. F., Jefferies, R.L., Reynolds, J. F., Shaver, G. R. Svoboda, J., and Chu, E. W., pp. 259-279. Academic Press, Inc., San Diego.
- Oechel W. (1989) Nutrient and water flux in a small arctic watershed: an overview. *Holarctic Ecology*, 12, 29-237.
- Oechel W.C., Cook, A. C., Hastings, S. J., and Vourlitis, G. L. (1997) Effects of CO₂ and climate change on arctic ecosystems. *Ecology of Arctic Environments*. Eds. Woodin, S. J., and Marquiss, M., pp. 255-273. Blackwell Science Limited, Oxford.
- Ostendorf B., and Reynolds, J. F. (1998) A model of arctic tundra vegetation derived from topographic gradients. *Landscape Ecology*, 13, 187-201.
- Pielou E.C. (1994) *A Naturalist's Guide to the Arctic*. The University of Chicago Press, Chicago.
- Porsild A.E., and Cody, W. J. (1980) *Vascular Plants of Continental Northwest Territories, Canada*. National Museums of Canada, Ottawa.
- Purevdorj R., Tateishi, R., Ishiyama, R., and Honda, Y. (1998) Relationships between percent vegetation cover and vegetation indices. *International Journal of Remote Sensing*, 19, 3519-3535.
- Qi J., Huete, A. R., Kerr, Y. H., and Sorooshian, S.. (1994) A Modified Soil Adjusted Vegetation Index. *Remote Sensing of Environment*, 48, 119-126.
- Radarsat International. (2002) *Products and Resources: Landsat 7*. URL <http://www.rsi.ca/>.
- Rees W.G., Golubeva, E. I., and Williams, M. (1998) Are vegetation indices useful in the Arctic? *Polar Record*, 34, 333-336.
- Richardson A.J., and Wiegard, C. L. (1977) Using spectral vegetation indices to estimate rangeland productivity. *Geocarto International*, 1, 63-70.
- Rouse J.W., Haas, R. H., Schell, J. A., and Deering, D. W. (1974) Monitoring vegetation systems in the Great Plains with ERTS. *Third Earth Resources Technology Satellite-1 Symposium*. Eds. Freden, S. C, Mercanti, E. P., and Becker, M. A., pp. 309-317. National Aeronautics and Space Administration, Scientific and Technical Information Office, Goddard Space Flight Centre, Washington, D.C. December 10-14.
- Schaefer J.A., and Messier, F. (1995) Scale-dependent Correlations of Arctic Vegetation and Snow Cover. *Arctic and Alpine Research*, 27, 38-43.
- Sellers P.J., Berry, J. A., Collatz, G. J., Field, C. B., and Hall, F. G. (1992) Canopy reflectance, photosynthesis and transpiration. III. A re-analysis using improved leaf models and a new canopy integration scheme. *Remote Sensing of Environment*, 42, 1-30.

- Shapiro S.S., Wilk, M. B., and Chen, H. J. (1968) A Comparative Study of Various Tests for Normality. *Journal of the American Statistical Association*, 63, 1343-1372.
- Shaver G.R., and Chapin, S. F. (1991) Production: Biomass Relationships and Element Cycling in Contrasting Arctic Vegetation Types. *Ecological Monographs*, 61, 1-31.
- Shaver G.R., and Kummerow, J. (1992) Phenology, Resource Allocation, and Growth of Arctic Vascular Plants. *Arctic Ecosystems in a Changing Climate - An Ecophysiological Perspective*. Eds. Chapin, S. F., Jefferies, R. L., Reynolds, J. F., Shaver, G. R. Svoboda, J., and Chu, E. W., pp. 193-211. Academic Press, Inc., San Diego.
- Shaver G.R., Billings, W. D., Chapin, S. F., Giblin, A. E., Nadelhoffer, K. J., Oechel, W. C., and Rastetter, E. B. (1992) Global Change and the Carbon Balance of Arctic Ecosystems. *Bioscience*, 42, 433-441.
- Shippert M.M., Walker, D. A., Auerbach, N. A., and Lewis, B. E. (1995) Biomass and leaf-area index maps derived from SPOT images for Toolik Lake and Imnavait Creek areas, Alaska. *Polar Record*, 31, 147-154.
- Smithsonian Meteorological Tables. (2002) *Smithsonian Meteorological Tables*. URL http://www.google.com/search?q=cache:2RpszhNDNhUC:edisto.egr.duke.edu/~medina/CE225/ephemer_sun.pdf+smithsonian+meteorological+tables&hl=en January 23.
- SpaceImaging. (2001) *IKONOS Statistics*. URL <http://www.spaceimaging.com/aboutus/satellites/IKONOS/ikonos.html#stats>. January 16.
- Spjelkavik S. (1995) A satellite-based map compared to traditional vegetation map of Arctic vegetation in the Ny-Alesund area, Svalbard. *Polar Record*, 31, 257-269.
- STATISTICA Help. (2000) *Shapiro-Wilk statistic*. StatSoft Inc., Tulsa. Version 5.5.
- Stonehouse B. (1989) *Polar Ecology*. Blackie and Son Limited, London.
- Stow D.A., Burns, B. H., and Hope, A. S. (1989) Mapping Arctic tundra vegetation types using digital SPOT/HRV-XS data - A preliminary assessment. *International Journal of Remote Sensing*, 10, 1451-1457.
- Stow D.A., Hope, A. S., and George, R. H. (1993a) Reflectance characteristics of arctic tundra vegetation from airborne radiometry. *International Journal of Remote Sensing*, 14, 1239-1244.
- Stow D.A., Burns, B. H., and Hope, A. S. (1993b) Spectral, spatial and temporal characteristics of Arctic tundra reflectance. *International Journal of Remote Sensing*, 14, 2445-2462.

- Stow D.A., Daeschner, S., Boynton, W., and Hope, A. (2000) Arctic tundra functional types by classification of single-date and AVHRR bi-weekly NDVI composite datasets. *International Journal of Remote Sensing*, 21, 1773-1779.
- Surveys and Mapping Branch. (1978) *District of Franklin, Northwest Territories*. Energy Mines and Resources, Ottawa. NTS map sheets 57F/11, 57F/7, 57F/6, 57F/3, 57F/2.
- Tarnocai C., and Netterville, J. A. (1976) Biophysical land classification in Boothia Peninsula and Northwest Keewatin, N.W.T. *Ecological (Biophysical) Land Classification in Canada*, pp. 159-171. Canada Committee on Ecological (Biophysical) Land Classification, Petawawa, Ontario. May 25-28.
- Teillet P. (2002) Personal Communication. *Correspondence concerning IKONOS radiometric calibration*. January/February.
- Tieszen L.L., Reed, B. C., Bliss, N. B., Wylie, B. K., and Dejong, D. D. (1997) NDVI, C3 and C4 production, and distributions in Great Plains grassland land cover classes. *Ecological Applications*, 7, 59-78.
- Treitz P., Howarth, P. J., and Suffling, R. C. (1992) Application of Detailed Ground Information to Vegetation Mapping with High Spatial Resolution Digital Imagery. *Remote Sensing of Environment*, 42, 65-82.
- Treitz P.M., and Howarth, P. J. (1999) Hyperspectral remote sensing for estimating biophysical parameters of forest ecosystems. *Progress in Physical Geography*, 23, 359-390.
- Trimble Navigation Limited. (1996) *GeoExplorer II - Operation Manual*. Trimble Navigation Limited, California.
- Tucker C.J. (1977) Asymptotic nature of grass canopy spectral reflectance. *Applied Optics*, 16, 1151-1157.
- Tucker C.J., Vanpraet, C. L., Sharman, M. J., and Van Ittersum, G. (1985) Satellite Remote Sensing of Total Herbaceous Biomass Production in the Senegalese Sahel: 1980 - 1984. *Remote Sensing of Environment*, 17, 233-249.
- Turner D.P., Cohen, W. B., Kennedy, R. E., Fassnacht, K. A., and Briggs, J. M. (1999) Relationships between Leaf Area Index and Landsat TM Spectral Vegetation Indices across Three Temperate Zone Sites. *Remote Sensing of Environment*, 70, 52-68.
- van Groenewoud H. (1992) The robustness of Correspondence, Detrended Correspondence, and TWINSpan Analysis. *Journal of Vegetation Science*, 3, 239-246.
- Vierling L.A., Deering, D. W., and Eck, T. F. (1997) Differences in arctic tundra vegetation type and phenology as seen using bi-directional radiometry in the early growing season. *Remote Sensing of Environment*, 60, 71-82.

- Walker D.A., Acevedo, W., Everett, K. R., Gaydos, L., Brown, J., and Webber, P. J. (1982) Landsat-assisted environmental mapping in the Arctic National Wildlife Refuge, Alaska. pp. 1-70. Colorado University, Institute of Arctic and Alpine Research, Boulder.
- Walker D.A. (1995) Toward a New Arctic Vegetation Map: St. Petersburg Workshop. *Arctic and Alpine Research*, 27, 103-104.
- Walker D.A., Auerbach, N. A., and Shippert, M. M. (1995) NDVI, biomass, and landscape evolution of glaciated terrain in northern Alaska. *Polar Record*, 31, 169-178.
- Walker D.A. (2000) Hierarchical subdivision of Arctic tundra based on vegetation response to climate, parent material and topography. *Global Change Biology*, 6, 19-34.
- Walker M.D., Walker, D. A., and Auerbach, N. (1994) Plant communities of a tussock tundra landscape in Brooks Range Foothills, Alaska. *Journal of Vegetation Science*, 5, 843-866.
- Wein R.W., and Rencz, A. N. (1976) Plant cover and standing crop sampling procedures for the Canadian High Arctic. *Arctic and Alpine Research*, 8, 139-150.
- Wiens J.A. (1989) Spatial scaling in ecology. *Functional Ecology*, 3, 385-397.
- Woodcock C.E., and Strahler, A. H. (1987) The Factor of Scale in Remote Sensing. *Remote Sensing of Environment*, 21, 311-332.
- Young C.G., Dale, M. R. T., and Henry, G. H. R. (1999) Spatial pattern of vegetation in high arctic sedge meadows. *Ecoscience*, 6, 556-564.
- Young S.B. (1994) *To The Arctic*. Wiley Popular Science, Toronto.
- Yu R.V. (1994) Snowbed vegetation of far northeastern Asia. *Journal of Vegetation Science*, 5, 829-842.