

A SELECTED BIBLIOGRAPHY:
APPLICATION OF LANDSAT DIGITAL MULTISPECTRAL SCANNER
DATA TO AGRICULTURE, FORESTRY, AND RANGE MANAGEMENT

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ABSTRACT

This bibliography contains citations of selected publications and technical reports dealing with the application of Landsat digital data analysis techniques to agriculture, forestry, and range management problems. All of the citations were published between 1973 and 1977. The citations reference publications and reports which discuss specific analysis techniques and specific resource applications.

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INTRODUCTION

Landsats-1 and -2 have provided Earth resource scientists the opportunity to acquire multispectral data repetitively over large regions in a format suitable for digital image analysis. These capabilities provide a mechanism for monitoring change in Earth resources, mapping resources over extensive regions, and inventorying specific resources through use of appropriate statistical sampling procedures. Successful application of these data to resource management problems necessitates development of interpretive methodologies which allow quick, consistent, and accurate extraction of pertinent information in a cost effective manner. The availability of Landsat data has provided the impetus for development of new analysis techniques and the engineering and development of new, improved, low cost image analysis systems. The remote sensing literature is prolific with papers describing the application of digital image analysis techniques to various natural resource problems.

In preparing this bibliography, most major U.S. periodicals, symposia, and professional meeting symposia were examined. The bibliography is not intended to be all inclusive but rather to include those reports which were considered to be particularly significant.

A SELECTED BIBLIOGRAPHY: APPLICATION OF DIGITAL LANDSAT MULTI-SPECTRAL
SCANNER DATA TO AGRICULTURE, FORESTRY AND RANGE MANAGEMENT

- Aggers, L. W., Kelley, E. B., 1976, Douglas County forest cover condition mapping and forest volume inventory, in American Society of Photogrammetry, Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 218-229.
- Anderson, A. T., Schultz, D. T., and Buchman, N., 1975, Landsat inventory of surface-mined areas using extendible digital techniques, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. 1-A, p. 329-345.
- Anuta, P. E., 1975, Computer-aided analysis techniques for remote sensing data interpretation: Purdue University, Laboratory for Applications of Remote Sensing, LARS Information Note 100675, 31 p.
- Ballard, R. J. and Eastwood, L. F., Jr., 1977, Estimating costs and performance of systems for machine processing of remotely sensed data, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronic Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 208-214.
- Barker, G. R., and Fethe, T. P., 1975, Operational considerations for the application of remotely sensed forest data from Landsat or other airborne platforms, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. 1-A, p. 115-134.

- Bauer, M. E., 1977, Crop identification and area estimation over large geographic areas using Landsat MSS data: Purdue University, Laboratory for Applications for Remote Sensing, LARS Technical Report 012477, 160 p.
- Bauer, M. E., Hixson, M. M., Davis, B. J., and Etheridge, J. B., 1977, Crop identification and area estimation by computer-aided analysis of Landsat data, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 102-112.
- Bentley, R. G., Jr., Salmon-Drexler, B. C., Bonner, W. J., and Vincent, R. K., 1976, A Landsat study of ephemeral and perennial rangeland vegetation and soil: Bureau of Land Management, Denver, Colorado, Final Report Type III, March 1975 - December 1976, 234 p.
- Berkebile, J., Russell, J., and Lube, B., 1976, A forestry application simulation of man-machine techniques for analyzing remotely sensed data: Purdue University, Laboratory for Applications of Remote Sensing, LARS Information Note 012376, 80 p.
- Borden, F. Y., Merembeck, B. F., Thompson, D. N., Turner, B. J., and Williams, D. L., 1974, Classification and mapping of coal refuse, vegetative cover types, and forest types by digital processing ERTS-1 data, in Internal. Symposium on Remote Sensing of Environment, Michigan, 9th, 1974, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. I, p. 133-152.

- Buchman, N. and Hall, R. C., 1975, Comparison of digital and visual evaluation of Landsat-1 imagery for detection and monitoring of forest insect infestations, in Workshop for Environmental Applications of Multispectral Imagery, Ft. Belvoir, Virginia, November 1975, Proc.: U.S. Army Engineer Topographic Laboratories, p. 34-47.
- Carnegie, D. M., DeGloria, S. D., Colwell, R. N., 1975, Usefulness of Landsat data for monitoring plant development and range conditions in California's annual grassland, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. 1-A, p. 19-42.
- Carter, V., Garrett, M. K., Shima, L., and Gammon, P., 1977, The Great Dismal Swamp: Management of a hydrologic resource with the aid of remote sensing: Water Resources Bull., v. 13, No. 1, p. 1-12.
- Colwell, R. N., Cosentino, N. J., Daus, S., Titus, S., 1977, Southern California fuels-oriented vegetation mapping using multi-stage techniques: Univ. of California, Remote Sensing Research Program, Report on Contract No. 21-348, 25 p.
- Colwell, R. N. and Titus, S. J., 1976, Forestry applications project/ timber resource, Sam Houston National Forestry Inventory and Development of the Survey Planning Model: Univ. of California, Remote Sensing Research Program, Final Report, NASA Contract 9-14552, 75 p.

- Colwell, R. N., DeGloria, S. D., Daus, S. J., Thomas, R. W., and Carnegie, D. M., 1975, Spacecraft and aircraft remote sensing for integrated unit resource inventory and analysis in north-eastern California and northwestern Nevada: University of California, Final Report, Remote Sensing Research Program, Final Report.
- Daus, S. J. and Cosentino, N. J., 1977, The use of analysis of variance procedures for defining ground conditions of categories generated in an automatic analysis of Landsat MSS digital data, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 298-306.
- DeGloria, S. D., Daus, S. J., Tosta, N., and Bonner, K., 1975, Utilization of high altitude photography and Landsat-1 data for change detection and sensitive area analysis, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. I, p. 359-368.
- Deering, D. W., Rouse, J. W., Jr., Haas, R. H., and Schell, J. A., 1975, Measuring "forage production" of grazing units from Landsat MSS data, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1169-1178.

- Draeger, W. C., 1976, Machine-assisted analysis of Landsat data in the study of crop-soils relationships: U.S. Geological Survey Open-File Report 76-603, 19 p.
- Draeger, W. C., Nichols, J. D., Benson, A. S., Larrabee, D. G., Skenkus, W. N., and Hay, C. M., 1973, Regional agricultural surveys using ERTS-1 data, in Earth Resources Technology Satellite-1 Symposium, Washington, D.C., 3rd December 1973, Proc.: NASA Goddard Space Flight Center, SP-351, v. I, p. 117-125.
- Driscoll, R. S., Francis, R. E., Smith, J. A., and Mead, R. A., 1974, ERTS-1 data for classifying native plant communities--Central Colorado, in Internal. Symposium on Remote Sensing of Environment, Michigan, 9th, 1974, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1195-1212.
- Edwards, J. R., 1977, Computer training procedures for the Western Washington forest productivity study utilizing Landsat data, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7, MPRSD, p. 264-269.
- Fleming, M. D., Berkebile, S. S., and Hoffer, R. M., 1975, Computer-aided analysis of Landsat-1 MSS data: a comparison of three approaches, including a "modified clustering" approach: Purdue University, Laboratory for Applications of Remote Sensing, LARS Information Note 072475, 9 p.

- Flores, L. N. and Register, D. T., 1976, Evaluation of classification procedures for estimating wheat acreage in Kansas, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. 4B-24 - 4B-33.
- Gialdini, M. J., Titus, S., Nichols, J. D., and Thomas, R. W., 1975, The integration of manual and automatic image analysis techniques with supporting ground data in a multi-stage sampling framework for timber resource inventories: three examples, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-B, p. 1377-1388.
- Goodenough, D. and Shlein, S., 1974, Results of cover type classification by maximum likelihood and parallelepiped methods, in Canadian Symposium on Remote Sensing, Guelph, Ontario, Canada, 2nd April 1974, Proc.: Canadian Remote Sensing Society, v. I, p. 135-164.
- Haas, R. H., Deering, D. W., Rouse, J. W., Jr., and Schell, J. A., 1975, Monitoring vegetation conditions from Landsat for use in range management, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-A, p. 43-52.
- Hanuschak, G. A., 1976, Landsat estimation with cloud cover, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. PB-11-PB-13.

- Heller, R. C., 1976, Natural Resource Surveys, in XIII Congress of the International Society of Photogrammetry, Helsinki, 1976, Commission VII, Interpretation of Data, Proc.: International Society of Photogrammetry, 29 p.
- Henderson, R. G., Thomas, G. S., and Nalepka, R. F., 1975, Methods of extending signatures and training without ground information: Environmental Research Institute of Michigan, Ann Arbor, Michigan, ERIM 109700-17-F.
- Hoffer, R. M., 1975, Computer-aided analysis of Skylab multi-spectral scanner data in mountainous terrain for land use, forestry, water resource, and geologic applications: Purdue University, Laboratory for Applications of Remote Sensing, LARS Information Note 121275, 381 p.
- Hoffer, R. N., 1975, Natural resource mapping in mountainous terrain by computer analysis of ERTS-1 satellite data: Purdue University, Laboratory for Applications of Remote Sensing, LARS Research Bull. 919, 124 p.
- Hoffer, R. M., Fleming, N. D., and Krebs, P. V., 1974, Use of computer-aided analysis techniques for cover type mapping in areas of mountainous terrain: Purdue University, Laboratory for Applications of Remote Sensing, LARS Information Note 091774.
- Hyde, R. F., Goward, S. N., and Mausel, P. W., 1977, ISURSL levels classification: A low cost approach to multi-spectral data analysis, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronic Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 322-332.

- Jackson, T. J., Ragan, R. M., and McCuen, R. N., 1975, Land use classification for hydrologic models using interactive machine classification of Landsat data, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-D, p. 2351-2364.
- Kan, E. P., 1975, A new computer approach to map mixed forest features and post process multispectral data, in American Society of Photogrammetry Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 386-402.
- Kan, E. P. and Dillman, R. D., 1975, Timber type separability in southeastern United States on Landsat-1 MSS data, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-A, p. 135-158.
- Kan, E. P., Lo, J. K., and Smelser, R. L., 1975, A new image enhancement algorithm with applications to forestry stand mapping, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 745-756.
- Kalensky, Z. and Scherk, L. R., 1975, Accuracy of forest mapping from Landsat computer compatible tapes, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1159-1168.

- Katibah, E. F., 1975, Aerial extent of snow estimation in the northern Sierra Nevada mountains using Landsat-1 imagery, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-D, p. 2621-2642.
- Khorram, S. and Thomas, R. W., 1975, Development of a remote sensing aided-evapotranspiration estimation system, in Workshop for Environmental Applications of Multispectral Imagery, Ft. Belvoir, Virginia, November 1975, Proc.: U.S. Army Engineer Topographic Laboratories, p. 156-168.
- Lambeck, P. F., and Rice, D. P., 1976, Signature extension using transformed cluster statistics and related techniques: Environmental Research Institute of Michigan, Ann Arbor, Michigan, ERIM 109600-70-F, 82 p.
- Langley, P. G. and van Roessel, J. W., 1975, Investigation to develop a multistage forest sampling inventory system using ERTS-1 imagery: NASA Goddard Space Flight Center, Greenbelt, Maryland, Type III, Final Report.
- LaPerriere, A. J. L., III, 1976, Use of Landsat imagery for wildlife habitat mapping in northeast and east central Alaska, Final report, December 1976: Fairbanks, Alaska, Univ. of Alaska, NAS 5-20195, 39 p.
- Lee, Y. J., 1976, Computer-assisted forest land classification in British Columbia and Yukon Territory: a case study, in American Society of Photogrammetry, Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 240-250.

- MacDonald, R. B., Hall, F. G., and Erb, R. B., 1975, The use of Landsat data in a large area crop inventory experiment (LACIE), in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, 1975, Proc.: New York, Institute of Electrical and Electronic Engineers, IEEE Catalog No. 75 CH 1009-0-C, p. 1B-1 - 1B-23.
- Maxwell, E. L., 1975, Applications of ERTS to rangeland management, in Remote Sensing of Earth Resources, Tullahoma, Tennessee, March 1975, Proc.: University of Tennessee, Tennessee Space Institute, v. IV, p. 105-136.
- Mead, R. A. and Meyer, M. P., 1977, Landsat digital data applications to forest vegetation and land use classification in Minnesota, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 270-208.
- Messmore, J., Copeland, G. E., and Levy, G. F., 1975, Mapping forest vegetation with ERTS-1 MSS data and automatic data processing techniques, in Remote Sensing of Earth Resources, Tullahoma, Tennessee, March 1975, Proc.: University of Tennessee, Tennessee Space Institute, v. IV, p. 327-344.
- Nichols, J. D., Harding, R. A., Scott, R. B., and Edwards, J. R., 1976, Forest inventory of Western Washington by satellite multi-stage sampling, in American Society of Photogrammetry, Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 180-217.

- Nichols, J. D., 1975, Mapping of the wildland fuel characteristics of the Santa Monica mountains of southern California, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-A, p. 159-166.
- Nichols, J. D., 1974, ERTS-1 data as an aid to wildland resource management in northern California: Remote Sensing Research Program, Space Sciences Laboratory, Univ. of California, Berkeley, California, Type III Final Report, SSL Ser. 16, ISS. 62, 472 p.
- Nichols, J. D., Gialdini, M. J., Orme, B., and Lauer, D. T., 1974, ERTS as an aid in timber volume inventory: A special report to Office of Applications, NASA headquarters, Remote Sensing Research Program, Univ. of California, Berkeley, California, 31 p.
- Nichols, J. D., Gialdini, M., and Jaakkola, S., 1973, A timber inventory based upon manual and automated analysis of ERTS-1 and supporting aircraft data using multi-stage probability sampling, in Earth Resources Technology Satellite-1 Symposium, Washington, D.C., 3rd, December 1973, Proc.: NASA Goddard Space Flight Center, SP-351, v. I, p. 145-157.
- Ozga, M., Donovan, W. E., and Gleason, C. P., 1977, An interactive system for agricultural acreage estimates using Landsat data, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronic Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 113-123.

- Packer, M. R., 1976, Developing operational techniques for the use of Landsat data in identifying irrigated agriculture in Idaho, in American of Photogrammetry, Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 267-272.
- Pearson, R. W., 1977, MAXL4X-A large area Landsat classifier, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 308.
- Rado, B. Q., 1975, An examination of the potential applications of automatic classifications and techniques to Georgia land management problems, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-C, p. 1525-1540.
- Rafsnider, G. P., Rogers, R., and Morse, A., 1977, Analysis and location of forest land in Western Massachusettes for a direct input to the resource analysis procedure, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, 281.
- Ray, R. M., III, and Huddleston, H. F., 1976, Illinois crop-acreage estimation experiment, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. PB-14-PB-21.

- Reeves, C. A., Austin, T., and Kerber, A., 1976, Landsat forest and range inventory of southeast Texas counties by administrative boundaries, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. 4B-12 - 4B-23.
- Rohde, W. G., Lo, J. K., Pohl, R. A., 1977, EROS Data Center Landsat digital enhancement techniques and imagery availability: Canadian Journal of Remote Sensing (in preparation).
- Rohde, W. G., Taranik, J. V., and Nelson, C. A., 1976, Inventory and mapping of flood inundation using interactive digital image analysis techniques, in Annual William T. Pecora Conference, Sioux Falls, S.D., 2nd, October 1976, Proc.: (in press).
- Rohde, W. G. and Moore, H. J., 1974, Forest defoliation assessment with satellite imagery, in Internal. Symposium on Remote Sensing of Environment, Michigan, 9th, 1974, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1089-1104.
- Rogers, R. H., Reed, L. E., and Pettyjohn, W. A., 1973, Automated strip-mined and reclamation mapping from ERTS, in Earth Resources Technology Satellite-1 Symposium, Washington, D.C., 3rd, December 1973, Proc.: NASA Goddard Space Flight Center, SP-351, v. II, p. 1519-1531.

- Sayn-Wittgenstein, L., and Wightman, J. N., 1975, Landsat applications in Canadian forestry, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1209-1218.
- Sayn-Wittgenstein, L. and Kalensky, Z., 1974, Interpretation of forest patterns on computer compatible tapes, in Canadian Symposium on Remote Sensing, Guelph, Ontario, Canada, 2nd, April 1974, Proc.: Canadian Remote Sensing Society, v. I, p. 268-276.
- Seevers, P. M., Drew, J. V., and Carlson, N. P., 1975, Estimating vegetative biomass from Landsat-1 imagery for range management, in NASA Earth Resources Survey Symposium, Houston, Texas, June 1975, Proc.: National Aeronautics and Space Administration, v. I-A, p. 1-8.
- Seidel, K., Gfeller, R., and Binzegger, R., 1975, Snow and vegetation classifications by means of digital Landsat-MSS-data, in Remote Sensing of Earth Resources, Tullahoma, Tennessee, March 1975, Proc.: University of Tennessee, Tennessee Space Institute, v. IV, p. 317-326.
- Shlein, S., 1975, Practical aspects related to automated classification of Landsat imagery using look-up tables: Canada Center for Remote Sensing, Ottawa, Canada, Research Report 75-2, 15 p.
- Sigman, R., Gleason, C. P., Hanuschak, G. A., and Starbuck, R. R., 1977, Stratified acreage estimates in the Illinois crop-acreage experiment, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 80-90.

- Thie, J., Tarnocai, C., Mills, G. E., and Kristof, S. J., 1974,
A rapid resource inventory for Canada's north by means of satellite and airborne remote sensing, in Canadian Symposium on Remote Sensing, Guelph, Ontario, Canada, 2nd, April 1974, Proc.: Canadian Remote Sensing Society, v. I, p. 199-216.
- Thomas, R. W., and Hay, C. M., 1977, Two phase sampling for wheat acreage estimation, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1977, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 77 CH 1218-7 MPRSD, p. 91-101.
- Titus, S. J. Gialdini, M. J., and Nichols, J. D., 1975, A total timber resource inventory based upon manual and automated analysis of Landsat-1 in supporting aircraft data using stratified multistage sampling techniques, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1093-1099.
- Titus, S. J., Wensel, L. C., and Colwell, R. N., 1977, Development of sampling designs to use with remotely sensed data for natural resources, Final Report, USFS Agreement No. 16-640-CA, 44 p. + append.
- Turner, R. E., 1975, Signature variations due to atmospheric affects, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 671-682.

- van Roessel, J. W., 1977, Machine estimation of timber volumes for use in sampling surveys: Photogrammetric Engineering, (Submitted for publication).
- van Roessel, J. W., 1976, Machine estimation of timber volume for use in sampling surveys, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. 4B-34-4B-40.
- Walker, J. E., Gallagher, T. W., Schott, J., 1977, Forest damage assessment system (FORDAS) study: Calspan Corporation, Buffalo, N.Y., Calspan Report No. RK-6099-M-1, 49 p.
- Waters, M., III, 1975, Estimation of moisture content of forest fuels over the southeastern U.S. using satellite data, in Internal. Symposium on Remote Sensing of Environment, Michigan, 10th, 1975, Proc.: Ann Arbor, Environmental Research Institute of Michigan, v. II, p. 1199-1208.
- Wigton, W. H., 1976, Use of Landsat technology by statistical reporting service, in Machine Processing of Remotely Sensed Data, West Lafayette, Indiana, June 1976, Proc.: New York, Institute of Electrical and Electronics Engineers, IEEE Catalog No. 76 CH 1103-1 MPRSD, p. PB-6-PB-10.
- Williams, D. L., 1976, A canopy-related stratification on a southern pine forest using Landsat digital data, in American Society of Photogrammetry, Fall Convention, Seattle, Washington, September 1976, Proc.: American Society of Photogrammetry, p. 231-239.

Williams, D. L. and Haver, G. F., 1976, Forest land management by
satellite: Landsat-derived information as input to a forest
inventory system: NASA Goddard Space Flight Center, Intralab
Project No. 75-1, 36 p.

Williams, D. L., 1975, Computer analysis and mapping of gypsy moth
defoliation levels in Pennsylvania using Landsat-1 digital data,
in NASA Earth Resources Survey Symposium, Houston, Texas, June
1975, Proc.: National Aeronautics and Space Administration, v. I-A,
p. 167-182.

Work, E. A., Jr., Gilmer, D. S., and Klett, A. T., 1973, Utility of
ERTS for monitoring the breeding habitat of migratory waterfowl,
in Earth Resources Technology Satellite-1 Symposium, Washington, D.C.,
3rd, December 1973, Proc.: NASA Goddard Space Flight Center, SP-315,
v. II, p. 1671-1685.