

WISCONSIN MAPPING BULLETIN

Volume 9 No. 2 April 1983

A QUARTERLY NEWSLETTER FOCUSED ON
CARTOGRAPHIC ACTIVITIES IN WISCONSIN

Wisconsin State Cartographer's Office

Established 1973

144 Science Hall, UW Madison, WI 53706

(608) 262-3065

Art Ziegler
State Cartographer

Christine Reinhard
Editor

STATUS OF 7.5' U. S. G. S. TOPO QUADS

On April 27, 1983, Mr. Larry Borgerding, Chief of the Mid-Continent Mapping Center, U.S. Geological Survey (Rolla, MO), met with the Wisconsin Topographic Mapping Committee. The main topic of discussion was the status of 7.5' topo quad production in Wisconsin. That status is:

Total number required	1154	100%
Published as of 3/31/83	897	77.7%
Remaining	257	22.3%

(26 quads published since Jan. 1 1983)

The remaining 257 are in the following stages:

In Final Review.....41.....15.9%....printing schedule 1983
In Cartography.....138.....53.7%....printing schedule late 1983, early 1984
In pre-Cartography....78.....30.4%....printing schedule late 1984, early 1985

Mr. Borgerding predicted total 7.5' quad coverage by mid-1985. He also discussed the production of a 7.5 by 15 minute metric topographic quad in the south half of the North Ironwood 15' quad on the Upper Peninsula Michigan/Wisconsin border. There is less than one square mile of land area of Wisconsin in this quad. It's the only metric production by U.S.G.S. in Wisconsin.

Mr. Borgerding committed U.S.G.S. to producing one county metric topographic map at 1:100,000 scale. The Committee selected BROWN COUNTY from those available in Wisconsin.

ANTIGO SILT LOAM

The Senate passed Bill 89 designating the Antigo silt loam as the state soil of Wisconsin. It is now in the Assembly's Committee on State Affairs.

Sing with gusto:

"Antigo a soil to know,
Wisconsin's crops and livestock grow.
And forests too, on Antigo.
And forests too, on Antigo."

(song by Prof. Francis Hole)

NEW PRODUCTION FROM U.S. GEOLOGICAL SURVEY

These newly published 7½' topographic quadrangle maps (1:24,000) are listed by their location on the superseded 15' topographic map of the area. They are available from the Wisconsin Geological Survey, 1815 University Ave., Madison, WI 53705-4096 (608) 263-7389. Topographic quadrangles are \$2.00 each, plus tax, postage and handling.

1 SOLON SPRINGS 15' TOPO
NE¼ Bennett '81
NW¼ Lyman Lake '75
SW¼ none
SE¼ Solon Springs '82

2 MINONG 15' TOPO
NE¼ Gordon '82
NW¼ Minong Flowage '82
SW¼ Horseshoe Lake '82
SE¼ Minong '82

3 SPOONER 15' TOPO
NE¼ Trego '82
NW¼ none
SW¼ none
SE¼ Spooner Lake '82

4 SHELL LAKE 15' TOPO
NE¼ Sarona '81
NW¼ Shell Lake '82
SW¼ Lower Vermillion Lake '82
SE¼ Haugen '82

5 RICE LAKE 15' TOPO
NE¼ Birchwood '82
NW¼ Nobleton '82
SW¼ Rice Lake North '81
SE¼ Mikana '81

6 OWEN 15' TOPO
NE¼ Owen '82
NW¼ Lombard '82
SW¼ Mead Lake East '82
SE¼ Greenwood '82

7 STRATFORD 15' TOPO
NE¼ Wien '82
NW¼ Milan '82
SW¼ Little Rose '82
SE¼ Stratford '81

8 WAUSAU 15' TOPO
NE¼ Wausau East '76
NW¼ Wausau West '78
SW¼ Mosinee '82
SE¼ none

9 HATLEY 15' TOPO
NE¼ Hatley '82
NW¼ Ringle '82
SW¼ Bevent '82
SE¼ none

10 WITTENBERG 15' TOPO
NE¼ Regina '82
NW¼ Birnamwood '82
SW¼ Wittenberg '82
SE¼ Shepley '82

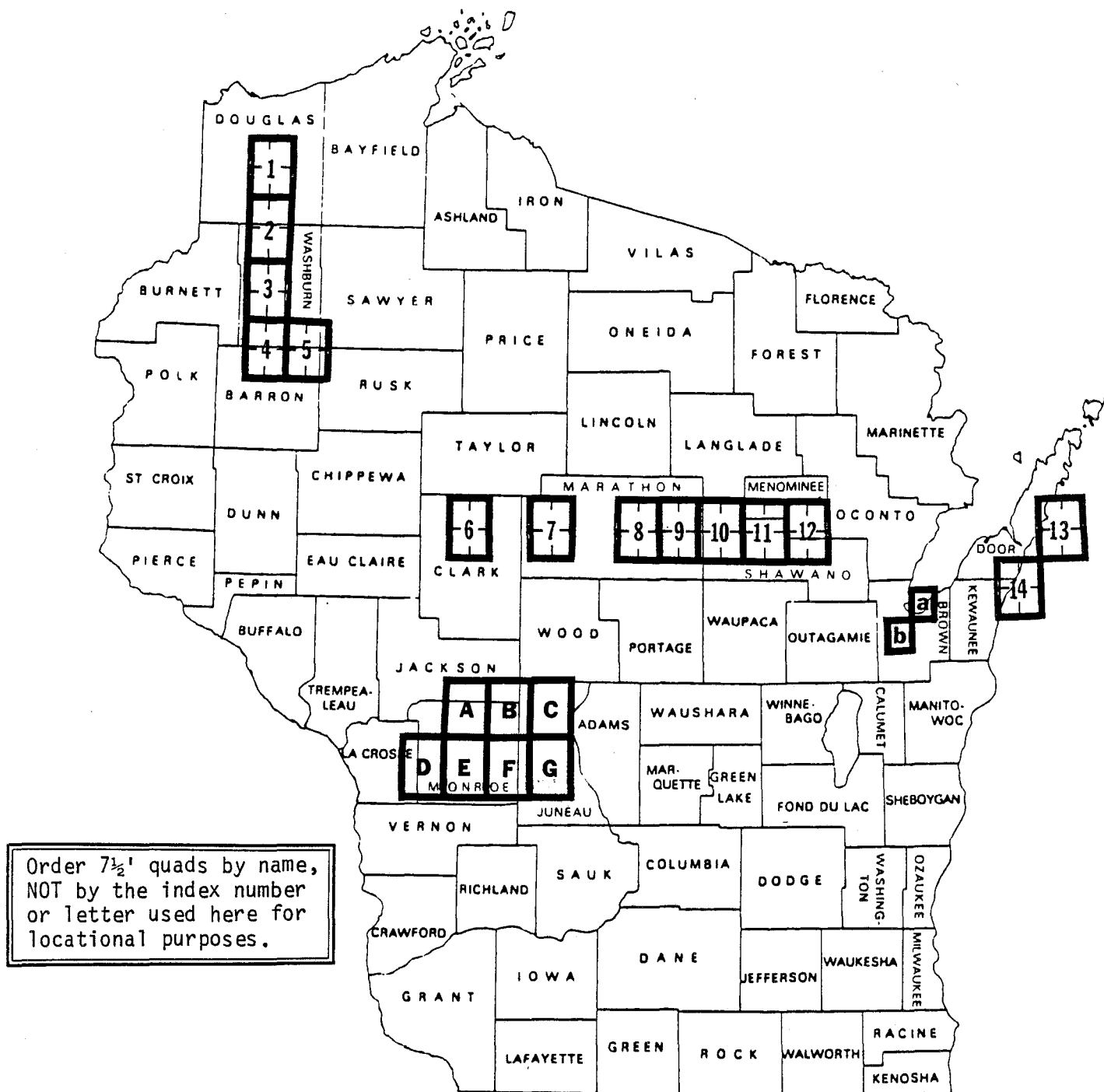
11 GRESHAM 15' TOPO
NE¼ Neopit '82
NW¼ none
SW¼ Bowler '82
SE¼ Gresham '82

12 SHAWANO 15' TOPO
NE¼ Legend Lake '82
NW¼ Keshena '82
SW¼ none
SE¼ Shawano '82

13 JACKSONPORT 15' TOPO
NE¼ none
NW¼ none
SW¼ Jacksonport SW '82
SE¼ none

14 ALGOMA 15' TOPO
NE¼ none
NW¼ none
SW¼ Algoma '82
SE¼ none

PHOTOREVISED 7½' QUADS
a Green Bay East '71, '82PR
b De Pere '71, '82PR



DEFENSE MAPPING AGENCY

- A** Millston 15' 1976
- B** Wyeville 15' 1976
- C** Necedah 15' 1976
- D** Sparta 15' 1976
- E** Tomah 15' 1976
- F** Kendall 15' 1976
- G** Mauston 15' 1976

Defense Mapping Agency 1:50,000-scale topographic map with a 10-meter contour interval; prepared on a cooperative basis with the U.S.G.S. for selected areas of the United States. The multicolor topographic map is available for \$2.00 from the U.S.G.S., Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202.



SOUTHERN LAKE MICHIGAN SECTION/ACSM---May 20

The local section of the American Congress on Surveying and Mapping will tour Berntsen Inc., maker of survey monuments and also learn about Prof. David Woodward's (UW-Madison) History of Cartography project at their spring meeting. The program begins at 1:00 at Berntsen's, 4175 Hanson Road, Madison. A business meeting will close the afternoon. The general public is invited. Call Bruce Meier 608/257-4844 for more information.

NATIONAL COMPUTER GRAPHICS ASSOCIATION---June 26-30

"Graphics at Work" is the theme of the NCGS's fourth annual conference and exposition in Chicago's McCormick Place. It's possible to register for the exhibits only. For details call 703/466-5895 or write NCGA'83, P.O. Box 3412, McLean, VA 22103.

HARVARD COMPUTER GRAPHICS CONFERENCE---July 31-August 4

"Computer Graphics in Environmental Planning and Design: Concepts, Technologies, and Applications" is an international conference sponsored by the Harvard Graduate School of Design Laboratory for Computer Graphics and Spatial Analysis. It will be held at the Hyatt Regency Hotel in Cambridge, MA. For more information contact the Harvard Computer Graphics Conference, 48 Quincy Street, Cambridge, MA 02138, 617/495-9345.

AUTO-CARTO SIX---October 16-21

The sixth international symposium on automated cartography will meet in Ottawa. Direct all inquiries to the Auto-Carto Six Secretariat, Dept. of Geography, Carleton University, Ottawa, Ontario K1S 5B6 Canada.

NORTH AMERICAN CARTOGRAPHIC INFORMATION SOCIETY---October 20-22

The third annual NACIS meeting will be held in Milwaukee. The theme is "Map Information: Collection, Verification, Compilation." See Call for Papers on page 10.

NEBENZAHL LECTURES---October 27-29

The theme of the Seventh Kenneth Nebenzahl, Jr. Lectures in the History of Cartography at the Newberry Library, Chicago is "Maps in the Making; the Various Sources of Printed Maps." Seating capacity is limited. Apply for reservations to the Office of the Director, The Newberry Library, 60 West Walton Street, Chicago, IL 60610, phone 312/943-9090, ext. 251.

PUBLICATIONS OF INTEREST

PROCEDURES AND STANDARDS FOR A MULTIPURPOSE CADASTRE

The Panel on a Multipurpose Cadastre of the Committee on Geodesy of the National Research Council has issued a report on improving land-information systems. In it the Panel explores ways in which federal and local governments can develop the elements of a multipurpose cadastre for improved collection, maintenance, and dissemination of land information. Kurt Bauer, Director of the Southeastern Wisconsin Regional Planning Commission, was a member of the Panel. The 173-page report is available from the National Academy Press, 2101 Constitution Ave. N.W., Washington, D.C. 20418 for \$8.50.

DUPLICATIVE FEDERAL COMPUTER-MAPPING PROGRAMS: A GROWING PROBLEM

The US General Accounting Office is recommending a number of actions to eliminate unnecessary Federal costs in expanding computer mapping programs. Up to five copies of the 50-page report are available free of charge from the U.S. General Accounting Office, Document Handling Facility, P.O. Box 6015, Gaithersburg, MD 20760.

1983 SOLAR EPHEMERIS

Keuffel & Esser/Kratos has published an 84-page booklet which gives directions for determining astronomic (true) north, latitude and longitude by observations of the sun, the north star and certain other bright stars. Copies are available for \$1.00 from Keuffel & Esser/Kratos, 20 Whippany Road, Morristown, NJ 07960.

WISCONSIN'S LAKES--A TROPHIC ASSESSMENT USING LANDSAT DIGITAL DATA

A cooperative program between the Wisconsin Department of Natural Resources and the UW-Madison Environmental Remote Sensing Center resulted in the assessment of the trophic conditions of approximately 3,000 significant inland lakes. Since the trophic conditions of lakes change over time, only Landsat data during the growing season (May-October) from 1979-81 was used in the classification process. This Wisconsin Lake Classification Survey Project #S00536601 is available free of charge from the Inland Lake Renewal Section, DNR, P.O. Box 7921, Madison, WI 53707.

DOUGLAS COUNTY CARTOGRAPHIC CATALOG

The SCO production staff is justifiably proud of its latest catalog. The Douglas County catalog contains topographic, hydrographic, geologic, historical, and land-use map information as well as sections on aerial photography and geodetic control. It is the 28th county to be finished. JEFFERSON COUNTY is expected in July, followed by BAYFIELD and IRON in September. All county cartographic catalogs are available free of charge from the State Cartographer's Office, 144 Science Hall, Madison, WI 53706, ATTN: Brenda Skaggs.

continued



PUBLICATIONS OF INTEREST, continued

BIBLIOGRAPHY AND INDEX OF WISCONSIN GEOLOGY 1698-1977

This long-awaited geologic reference work is now available from the Wisconsin Geological & Natural History Survey as Bulletin 89. Christine Reinhard compiled the 84-page bibliography and index which contains numerous map references.

It is available from M.A.P.S., Wisconsin Geological Survey, 1815 University Ave., Madison, WI 53705-4096 for \$10.00, plus tax and \$1.70 mailing charge.

A GUIDE TO THE GLACIAL LANDSCAPES OF DANE COUNTY

David Mickelson is the author of the Wisconsin Geological Survey's Field Trip Guide Book 6. The most profound effect on the appearance of landscape in Dane County was glaciation. The 53-page guidebook explains the resulting features to both the scientist and the general public. The insides of the front and back covers are self-guided field trip maps. Accompanying the book is a full-color map, Glacial Geology of Dane County, Wisconsin, by Mickelson and McCartney at a scale of 1:100,000. A false-color, infrared Landsat image of Dane County brightens the cover. The guidebook is well worth \$5.95. Order from M.A.P.S., Wisconsin Geological Survey, 1815 University Ave., Madison, WI 53705-4096 plus tax and a \$1.70 mailing charge.







THE NEWBERRY LIBRARY

Chicago is a center for map-making, and the Newberry Library has one of the world's great collections of printed maps and atlases. David Buisseret, a former Newberry Fellow and Director of the library's Hermon Dunlap Smith Center for the History of Cartography, says that research projects have been greatly aided by the completion of the new Bookstack Building. For the first time, the Newberry's collection of 60,000 maps has been consolidated. "Before they were moved to the Bookstack, the maps were located in about ten different areas," he says. "It certainly makes things easier to have them all together."

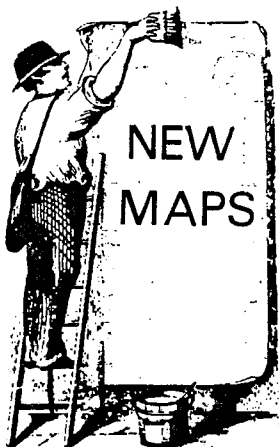
Work conditions for map-readers will also improve considerably with the completion of the Center's new home on the fourth floor of the library. Buisseret hopes to increase the number of map-related programs. Currently, the Center sponsors the Kenneth Nebenzahl, Jr. lectures, Mapline magazine, and the annual Summer Institute of Cartography, as well as fellowships and publications.

(Source: *The Newberry Library*)

STATUS OF SOIL SURVEYS
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

-  Modern published soil survey
-  Modern soil survey with field mapping completed to be published
-  Modern soil survey being conducted with date for completion set
-  Old published soil survey
- * Expected by fall of 1983





LAND USE/LAND COVER MILWAUKEE

Open-file Report 82-230, Land use and land cover and associated maps of Milwaukee, Wisconsin, consists of one map coded for statistical data development and keyed to the USGS 1:250,000 Milwaukee topographic map. Also included is one black-and-white copy of the Milwaukee cultural (no contours) base. Order for \$3.25 from the U.S. Geological Survey Mid-Continent Mapping Center, NCIC-M, 1400 Independence Road, Rolla, MO 65401.

1:100,000 MARINETTE, WI-MI

This intermediate scale map covers a 30' x 60' area. The contour interval is 10 meters. The Wisconsin Geological Survey now has it in stock. It's \$3.25 plus tax, postage, and handling. (That comes to \$3.91.) Order from M.A.P.S., Wisconsin Geological Survey,

1815 University Ave., Madison, WI 53705-4096 608/263-7389.

1:250,000 LA CROSSE, WI

The U.S. Geological Survey has revised nine 1:250,000 topographic maps and has two more in work. However the new La Crosse map is not a revised, updated map. It is merely a second edition of the 1958 base with new information in the margin.

CENSUS BUREAU MAPS

The Bureau has released the 1980 Wisconsin County Subdivision Map. Originally published in the Number of Inhabitants report series, the 42" x 60" map shows minor civil divisions, census county divisions, and all places. Order #003-024-05057-9 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402 for \$3.00.

The Census Bureau is adding school district boundaries to standard 1980 census maps. Map sheets will show census tracts and blocks with school district boundaries superimposed. Neither the National Center for Education Statistics nor the Bureau will sell the maps. The State Data Center and state education agencies will have copies of these maps when they become available later this year.

The new SMSA Wall Map shows the current 323 standard metropolitan statistical areas (SMSA's) in the United States and Puerto Rico. It includes the 17 standard consolidated statistical areas (SCSA's) formed when two or more adjacent, closely related metropolitan areas have significant commuting and economic ties. The GE50-76 map may be purchased for \$2.75 from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Use stock number 003-024-04870-1.

BEDROCK GEOLOGIC MAP (v. 9, no. 1, p. 7)

We have more information on the new 1:1,000,000-scale colored bedrock geologic map of Wisconsin. The map is available on regular map-stock paper for \$6.00 or on a tear-proof, water-proof, plasticized stock for \$20.00. Both maps require an additional \$1.75 for postage and handling charges. Order from M.A.P.S., Wisconsin Geological Survey, 1815 University Ave., Madison, WI 53705-4096, phone 608/263-7389.

BOUGUER GRAVITY MAPS

The following Geological Society of America maps are part of a series on the Great Lakes Region. They are available folded for \$10.50 or rolled for \$12.50. The same text is used for all the maps. Order from the G.S.A., Publication Sales Department, P.O. Box 9140, Boulder, CO 80301.

continued

NEW MAPS, continued

Lake Superior - Bouguer Gravity Map and Lake Superior - Total Magnetic Intensity Map. MC-37. Norbert W. O'Hara. 1981. Two sheets in color, 36" x 23". Scale 1:750,000. With 12-page text.

Lake Michigan - Bouguer Gravity Map and Lake Michigan - Total Magnetic Intensity Map. MC-38. Norbert W. O'Hara. 1981. Two sheets in color, 24" x 34". Scale 1:750,000.

Great Lakes Region - Bouguer Gravity Map, Great Lakes Region - Total Magnetic Intensity Map, and Great Lakes Region - Free-Air Gravity Map. MC-41. Norbert W. O'Hara. 1981. Two sheets in color, 28" x 33", one black-and-white sheet, 28" x 34". Scale 1:2,500,000. With 12-page text.

COMPOSITE MAGNETIC ANOMALY MAP OF THE U.S.

Part A: Conterminous United States, compiled under the direction of Isidore Zietz. 1982. Two sheets, 41" x 51". Scale 1:2,500,000 (1 inch = about 40 miles). Accompanied by a 59-page text. \$5 per set. Order Geophysical Investigation Map 954-A from the U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202.

SPACESHIP EARTH DYMAXION MAP

By Buckminster Fuller; 1982; shows the planet as a one-world island in a one-world ocean without any breaks in the continental contours; colors illustrate mean annual low temperature zones.

#101 Wall Map. 34" x 22". Includes an explanation of the projection used. \$8.00 post paid.

#102 Globe. 22" x 14½". As above but with 100 white dots, each representing 1% of humanity. Folds into a 5½" icosahedron with stand. \$2.00 post paid.

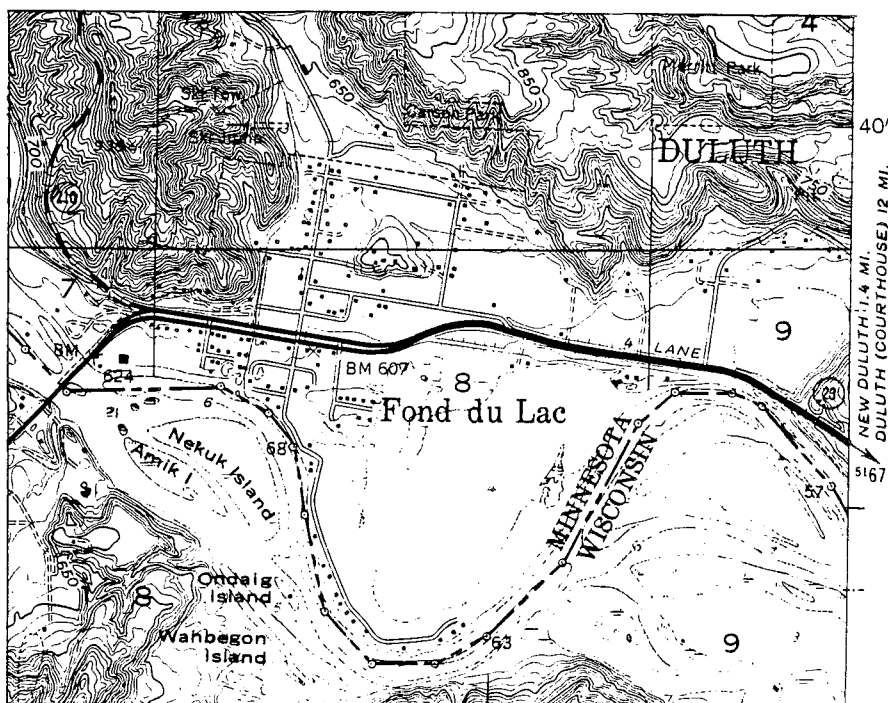
#103 Postcard. 5½" x 3½". Set of 10, \$2.50 post paid.

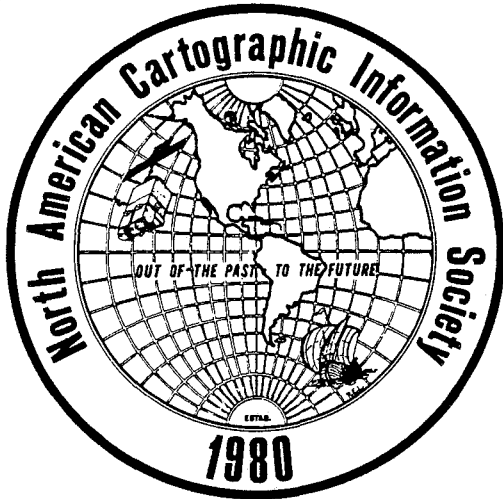
Order from the Buckminster Fuller Institute, 3501 Market Street, Philadelphia, PA 19104.

FOND DU LAC?

FOND DU LAC!

Everyone is familiar with the "bottom of the lake" on Lake Winnebago's south shore. But there is another Fond du Lac on the west end of Lake Superior in Minnesota. (This is a bit strange for those of us who correlate north with Top.) So, the next time someone mentions Fond du Lac, you can say "Did you know...."





NORTH AMERICAN
CARTOGRAPHIC INFORMATION
SOCIETY

1983 ANNUAL MEETING

MILWAUKEE, WI
OCTOBER 20-22, 1983

MAP INFORMATION: COLLECTION,
VERIFICATION, COMPILATION

CALL FOR PAPERS

The goal of NACIS is to promote communication, coordination, and cooperation among the producers, disseminators, curators, and users of cartographic information. The NACIS Annual Meeting will include paper sessions, panels, workshops, exhibits, and tours of cartographic facilities.

The NACIS Program Committee invites papers dealing with the collection, verification, and compilation of cartographic information -- both past and present. Those interested in presenting a paper should submit a title and a 300-word abstract sufficient for review no later than July 15, 1983.

*FOR GENERAL INFORMATION
CONTACT:*

Donald Daidone
Newman Library
Virginia Tech
Blacksburg, VA 24061
(703) 961-6308

SUBMIT PROPOSALS TO:

Ron Bolton
NOAA/NOS
8060 - 13th Street
Silver Spring, MD 20910
(301) 427-7650

ROAD MAP HISTORY

Early motorists, besides dealing with such hazards as frequent breakdowns, muddy roads and sparse fuel supplies, often had to overcome the worst hazards of all: sketchy road maps and unnumbered highways.

Highway maps - or "motoring guides," as they were then called - made their appearance as early as 1900, generally in the form of first-hand accounts of auto travels, complete with hand-drawn maps of the routes. These were snapped up by a new world of motorists eager for any information about this novel and exciting way to travel. These personal guides were strong on adventure but often ran short on detail.

Wisconsin was the first state to make sense out of all this disorder, partly because of early surveying efforts of Lucius Lyon, a rugged Vermont native. In 1828, after the 28-year-old deputy U.S. surveyor had spent seven years mapping the Michigan wilderness, he arrived in Wisconsin Territory to make the first official government survey. With chain and compass, Lyon made five surveys that opened Wisconsin to the advancing tide of lead miners, land-hungry settlers and speculators. After five years of work, he emerged from the forest one day to discover he had been nominated as the Democratic congressional candidate for Michigan Territory. He left Wisconsin and won the election.

While Lyon's name was quickly forgotten here, his five years of work in Wisconsin had resulted in an excellent survey of public lands. This enabled the state's legislature to establish a State Trunk Highway system in 1917, "not to exceed 5,000 miles." Equally important, the law prohibited the laying out and marking of any route without Highway Commission approval. The Commission was also directed to erect standard guide and warning signs.

Perhaps the most important innovation from the Wisconsin Highway Department was designating highways by number, begun in 1918. It met with such favor that it was

adopted by every state in the union within a few years. (excerpts from "Whatever happened to the Red Ball Trail?" by Bob Dries, AAA World, Wisconsin, v. 3, no. 2, 1983)



CART LAB NEWS

Jim Hilliard, Acting Associate Director of the UW-Madison Cartographic Lab, has no news for Bulletin readers this month but promises several items for the July issue. However there is one Cart Lab related item of interest:

The UW-Cart Lab's Prototype Handicap Map (v. 8, no. 3, p. 10) received an outstanding achievement award in the American Congress on Surveying and Mapping's tenth map design competition. The highly innovative handicap aid was among four winners in the thematic map category. Bruce Blasche, UW Behavioral Disabilities Department, and Blair Matthews, Assistant Dean of Students, originated the project. Onno Brouwer, Mike Rynish, and Barbara Anderson developed the award-winning design. The map covers the Bascom Hill area of campus and is one in a proposed series of eleven sections. At this time the map hasn't been printed.

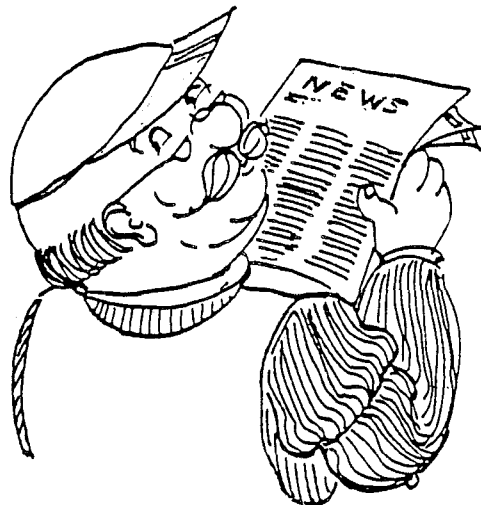
WESTPORT LAND RECORDS PROJECT NEWS

During the past four years the State Cartographer's Office has been a part of the interdisciplinary effort within the University of Wisconsin-Madison investigating the improvement and automation of recording and manipulating large-scale land records. This study is called the Westport Project, for the Town northwest of Madison where most of the effort has been concentrated. The various funding sources for this effort end in August of this year.

During the past several months, meetings have been held to determine if the project should be continued. At the present time it appears likely that at least a two-year extension of the investigation will be funded. It's continuation will focus on several areas, including the improvement of ground control and its effect on automated mapping, the inclusion of soil identification lines, and attempts at erosion prediction. Combining a wide range of mapped land resources into a cadastral record is the Westport Project's primary interest.

In addition to various departments in the University, the following organizations have expressed interest in cooperating in this effort: the U.S.D.A. Soil Conservation Service, the state Department of Agriculture, Trade and Consumer Protection, the state Department of Natural Resources and various Dane County offices. The July Bulletin will further document the results and planned efforts of the Westport group.

For more information contact Prof. Ben Niemann, Dept. of Landscape Architecture, 25 Ag Hall, Madison, WI 53706.



GEODETIC UPDATE

In announcing new geodetic control available from the National Geodetic Survey, we stated that the control for the VICINITY OF WISCONSIN RAPIDS, No. G16423 was ADJUSTED. This is an error; the information received from N.G.S. is still UNADJUSTED. The control sheets were infrequently marked as unadjusted and we overlooked the scattered, handwritten annotations.

An announcement appeared in the American Congress of Surveying and Mapping's Bulletin of April 1983 (page 49) stating that this geodetic information was now available as "Adjusted Horizontal Control Data Available in Manuscript Form." On April 25, 1983, the State Cartographer called the National Geodetic Survey to verify the status of the horizontal control for the vicinity of Wisconsin Rapids. The N.G.S. stated that, although the horizontal control for this area was ADJUSTED as of January 1983, new information sheets haven't been issued. The office hasn't yet received this information, which will have a new number: G16973.

We are sorry for any inconvenience this premature information may have caused. When the new adjusted information is received it will be announced in the Bulletin.

HOW TO IDENTIFY A SMALL TOWN

According to the North Dakota Cooperative Extension Service Newsletter, you'll know you're in a small town when:



Fourth Street is on the edge of town.

You don't use your turn signal because everyone knows where you're going.

You dial a wrong number and wind up talking for 15 minutes.

You get run off Main Street by a combine.

You write a check on the wrong bank and the folks over there cover it for you.

The pickup trucks downtown out-number cars three to one.

You miss a Sunday at church and receive a get-well card.

Someone asks how you are and then listens to what you say.

THE COMMITTEE ON STATE CARTOGRAPHY

It's been several years since the State Cartographer's Office (SCO) reported on its advisory committee. The Chancellor of the University of Wisconsin established the Committee on State Cartography at the SCO's inception to direct and oversee its operations. Several changes have recently occurred in the Committee's membership. Present at the spring meeting were:

- Prof. Phillip C. Muehrcke, Chairman, representing the Geography Department of UW-Madison,
- Prof. Paul R. Wolf, representing the Civil and Environmental Engineering Department of UW-Madison,
- Mr. Thomas Carlsen, of the Special Services Section, representing the state Department of Transportation,
- Mr. Dale Marsh, of the Office of Lands, Watershed and Land Resources, representing the state Department of Natural Resources,
- Mr. Allen Miller, of the Office of Coastal Management, representing the state Department of Administration,
- Dr. Meredith E. Ostrom, State Geologist, representing the Wisconsin Geological and Natural History Survey, and
- Prof. Thomas M. Lillesand, Director of the Environmental Remote Sensing Center, UW-Madison, representing the UW campus at large.

During the April 21st meeting, the Committee reviewed the fiscal budget for 1983-84 and discussed current and proposed projects and activities of the SCO. The State Cartographer explained the phase out of the Cartographic Data Collection program and outlined an automated production system. The outreach efforts of the SCO drew favorable comments from the Committee. The developmental map program compiling agricultural lands from Landsat imagery received approval. The Committee will meet in October to review these and other SCO projects.

UPDATE

STATE CARTOGRAPHERS IN THE U.S.

There have been several major changes in the status of state cartographers since January. The most notable of which are the loss of offices in Colorado and Washington. The current roster looks like this:

ARIZONA

state resident cartographer*
position requested

CALIFORNIA

state resident cartographer
position requested

HAWAII

state resident cartographer
position filled by
William A. Olson

IDAHO

Mike Sety
State Resident Cartographer
Department of Lands
Statehouse
Boise, ID 83720

NEVADA

Gene Faust
State Resident Cartographer
Bureau of Mines and Geology
Univ. of Nevada
Reno, NV 89557

OREGON

Glenn Ireland
State Resident Cartographer
847 N.E. 19th Ave.
Suite 300
Portland, OR 97232

SOUTH CAROLINA

Mike Holland
State Cartographer
South Carolina Division of Research
and Statistical Services
Office of Geographic Statistics
337 Rembert C. Dennis Bldg.
1000 Assembly Street
Columbia, SC 29201

UTAH

state resident cartographer
position requested

WISCONSIN

Art Ziegler
State Cartographer
160 Science Hall
University of Wisconsin
Madison, WI 53706

* a cooperative program between the state and the U.S. Geological Survey

FIND YOUR COUNTY

The inside of this issue's mailing cover is a "word search" puzzle. Ms. Brenda Skaggs, our secretary, constructed it. This is actually the second one she put together; the Editor couldn't do the first one.



THE REAL #1

January's Bulletin is really volume 9, number 1, not number 4. These things happen.

THE WISCONSIN MAPPING BULLETIN IS DISTRIBUTED FREE OF CHARGE ON REQUEST. NEWS ON COMPLETED OR ONGOING PROJECTS, PUBLISHED MAPS OR REPORTS, AND CONFERENCES/WORKSHOPS IS WELCOMED BY THE EDITOR. LOCAL AND REGIONAL INFORMATION IS ESPECIALLY REQUESTED. PLEASE SEND ALL COMMENTS, CORRECTIONS AND NEWS ITEMS TO CHRISTINE REINHARD, STATE CARTOGRAPHER'S OFFICE, 144 SCIENCE HALL, MADISON, WI 53706, (608) 262-3065.

April 1983

REMOTE SENSING BROADCAST

April 1983

WISCONSIN MAPPING BULLETIN SUPPLEMENT

Diane Chung

Thomas Lillesand

Christine Reinhard, Editor

ENVIRONMENTAL REMOTE SENSING CENTER

State Cartographer's Office 144 Science Hall, Madison, WI 53706 (608) 262-3065



ERSC UNDER NEW DIRECTOR

On September 1, 1982 Dr. Thomas M. Lillesand assumed the duties of the Director of the Environmental Remote Sensing Center (ERSC) within the UW-Madison's Institute for Environmental Studies. Dr. Lillesand is a Professor of Environmental Studies, Forestry, and Civil and Environmental Engineering. The UW is not new to him in that he completed his formal education here in 1973. Since then he has taught remote sensing at the SUNY College of Environmental Science and Forestry at Syracuse, New York and at the University of Minnesota. Dr. Lillesand has broad interests in the application of remote sensing to agriculture, forestry, water resources, environmental monitoring, and land use analyses. He is a member of the federal Land Remote Sensing Satellite Advisory Committee, which advises the Secretary of Commerce relative to the operation of the civil satellite program.

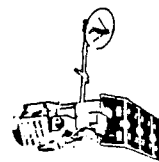
Dr. Lillesand can be reached at the Environmental Remote Sensing Center, 1213 Meteorology and Space Science Building, University of Wisconsin, Madison, WI 53706. His phone number is 608/263-3251.

LANDSAT 4 POWER PROBLEM

A flexible cable on Landsat 4 that carries power collected by one of the solar panel sections is failing. The first indication of deterioration appeared in the spacecraft transmissions a month ago. Officials speculated the cable was broken when no power went through it from March 26-28. It is now functioning intermittently. However, a second cable is showing signs of similar deterioration.

A complete break in a single cable would reduce available power by 25%. This would seriously limit data acquisition, particularly from the new Thematic Mapper Sensor. If two cables should break, cutting power in half, operation of the spacecraft would be drastically reduced.

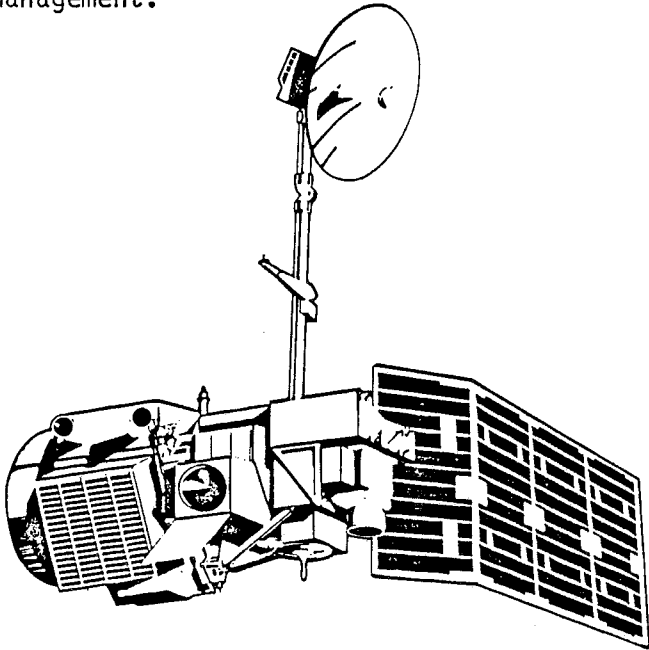
Contact J. Glover, (301) 763-7570 for more information.



ACKNOWLEDGEMENTS: Portions of this Remote Sensing Broadcast were adapted from publications previously issued by the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the American Society of Photogrammetry, Washington Remote Sensing Letter, Spot Image, and the Environmental Remote Sensing Center, University of Wisconsin-Madison.

LANDSAT 4

The Landsat satellites have been a valuable and prolific source of remotely sensed Earth resource data since the first Landsat was launched in July 1972. Today, Landsat data can be received and processed in 11 nations worldwide, and over 100 nations utilize Landsat data for resource evaluation and management.



Landsat 4 was launched on July 16, 1982. Aboard it is an improved, second generation, earth observing sensor called the thematic mapper (TM), and a four-band multispectral scanner (MSS) similar to those on previous Landsats. Landsat 4 orbits 705 km (431 miles) above the Earth's surface and scans a swath 185 km (115 miles) wide. The satellite crosses the equator at approximately 9:45 a.m. (local time) on each pass. Each orbit takes 99 minutes. The spacecraft completes approximately 14½ orbits a day, covering the entire Earth (except for the poles) every 16 days.

THEMATIC MAPPER

The thematic mapper operates in seven spectral bands with a ground resolution of 30m (90 feet) in all bands except for band 6 (thermal band) which has a ground resolution of 120m (394 feet).

Band ranges and principal applications are:

Band 1 0.45 to 0.52 micrometers; water body penetration, differentiation of soil from vegetation, and deciduous from coniferous flora.

Band 2 0.52 to 0.60 micrometers; vegetation vigor assessment.

Band 3 0.63 to 0.69 micrometers; vegetation discrimination.

Band 4 0.76 to 0.90 micrometers; determining biomass content and delineation of water bodies.

Band 5 1.55 to 1.75 micrometers; vegetation moisture content, soil moisture, differentiation of snow from clouds.

Band 6 10.40 to 12.50 micrometers; vegetation stress, soil moisture, thermal mapping.

Band 7 2.08 to 2.35 micrometers; rock type discrimination, hydro-thermal mapping.

DATA ACQUISITION

Landsat 4 data to date have been transmitted directly to U.S. and Canadian ground receiving stations via X-band frequencies. Initial comparisons of TM data to previous Landsats have been very encouraging. Unfortunately, on February 23, the X-band transmitter failed, halting TM data acquisition. Data transmissions are expected to resume with the positioning of a Tracking and Data Relay Satellite (TDRS) which was launched with the Space Shuttle in April. The TDRS is intended to be positioned in geostationary orbit over the equator. The Thematic Mapping data will be transmitted to the TDRS and from the TDRS to a White Sands, New Mexico ground station. A domestic communications satellite will then transmit the sensor data to the data processing facility at the Goddard Space Flight Center (GSFC) in Greenbelt, Maryland. It will then be made available to the Landsat data distribution center at the Earth Resources Observation Systems (EROS) Data Center in Sioux Falls, South Dakota.

continued

Prior to the X-band transmitter failure, about 6000 scenes were collected over North America. These data are being processed in the form of: (1) 241mm black-and-white paper prints and film transparencies for each of the seven bands; (2) false-color composites made from bands 2, 3, and 4; and (3) computer-compatible tapes (CCT's).

CURRENT DATA PRICES

A Landsat 4 MSS sample data package which contains a CCT and a negative film transparency of band 2 is available for \$50.

TM sample imagery prices are: \$38 for a 10-inch B&W positive transparency, \$33 for a B&W print and \$75 for a color print. A full TM scene (in 7 bands) on CCT costs \$2,800. Prices are expected to increase on October 1, 1983, and again on February 1, 1985. Additional information may be obtained from NOAA Landsat Customer Services, EROS Data Center, Sioux Falls, SD 57198.

INDEX MAP

The recently updated Worldwide Reference System index for the United States is now available. This map indicates the path-row points for Landsat 4 and may be obtained free of charge from NOAA Landsat Customer Services, EROS Data Center, Sioux Falls, SD 57198.

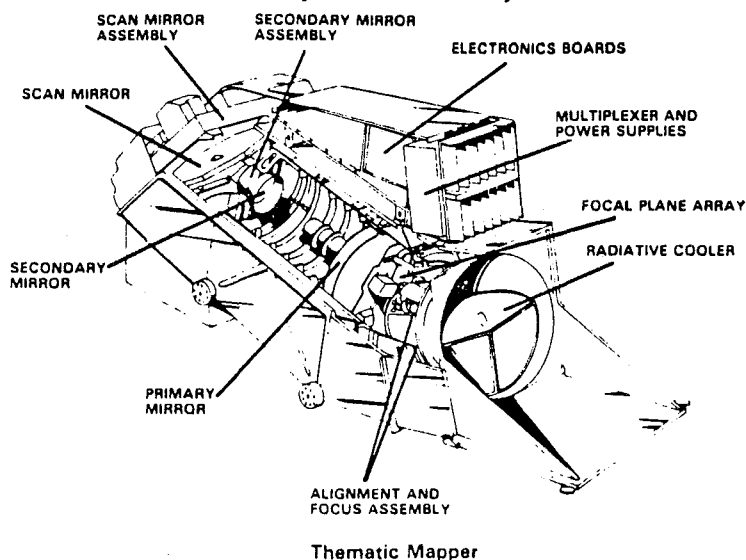
In February 1978, the French government approved and funded the Earth Observation Satellite Project (SPOT) which plans to launch its first earth resources satellite (SPOT-1) on October 15, 1984.

On board the SPOT satellite will be two high-resolution visible sensors. These instruments are designed to operate in either a black-and-white (panchromatic) mode, measuring light in the .51 to .73 micrometer band (green and red) of the spectrum, or in a 3-band multispectral mode. The multispectral bands included are: 0.50 to 0.59 micrometers (green), 0.61 to 0.68 micrometers (red), and 0.79 to 0.89 micrometers (reflected infrared). Objects as small as 10 meters (30 feet) and 20 meters (60 feet) will be distinguishable in the panchromatic and multispectral modes, respectively.

SPOT will be launched into a near-polar, sunsynchronous orbit at an altitude of 822 km with an orbital repeat every 26 days. A rotating mirror will permit an Earth scene to be acquired up to 400 km to the left or right of vertical, allowing more frequent looks at high-priority scenes and providing the capability for stereoscopic pairs of images for a given area. Typically SPOT will view a swath width of 117 km.

Data Transmitted from SPOT-1 will initially be received and processed at the Aussaguel-Issus Station in Toulouse, France. The imagery will be sold through the SPOT Image Corporation which recently opened an office in Washington, D.C. Their primary product will be a 60 x 60 km image in the black-and-white or multispectral mode on computer compatible tape (CCT) for about \$1,000.

The French plan to launch a second satellite (SPOT-2) in late 1986, which should provide data into the early to mid-1990's.



COMMERCIALIZATION OF LANDSAT AND/OR METSATS

On March 8, 1983 President Reagan announced his decision to transfer the nation's civil operational remote sensing satellites to the private sector. Potentially involved in this transfer are the present land observing system, Landsat, the entire meteorological satellite system, and the responsibility for any future ocean observing systems. It is envisioned that transfer would come about through a competitive process which would allow private firms to enter bids on one, some or all of the systems. Expressions of concern over the issue of commercialization have been widespread since the Administration's announcement. The issue is indeed a complex one and any commercialization initiative will require legislation. Consequently, substantial input on if and how to proceed will come from the Congress, which began holding hearings on the subject in April. (See the following article for a recent development, *ed.*)

a comprehensive statement of policies, procedures, conditions and limitations on the sale. Then, Congress must pass a law approving the sale on Congress' own terms if it is to go forward.
(source: *Washington Post News Service*)



HALT TO SALE SOUGHT

The House voted on April 26th to halt the sale of the nation's weather, land, and ocean satellites to private companies without specific congressional approval.

A similarly worded amendment recently passed in the Senate Commerce Committee, and is expected to pass easily on the Senate floor as well.

Members of Congress have been concerned that the sale of the weather satellites could jeopardize the quality of national forecasting, might create a government-subsidized private weather monopoly, and might create trouble internationally, since weather data has for more than a century been collected by world governments and shared freely.

The action by Congress prohibits sale of the satellites unless the Administration first submits to Congress

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EROS MOVES TO NATIONAL MAPPING DIVISION

The U.S. Geological Survey's Office of Earth Sciences Applications (OESA) was officially disbanded on July 29, 1982. As a result, the National Mapping Division (NMD) welcomed the transfer of two units of OESA. Effective August 22 the Earth Resources Observation Systems (EROS) Office was transferred to NMD. The Chief of EROS' program is designated Division Chief for EROS and will retain line management authority over the EROS office in Reston, the EROS Data Center in Sioux Falls, SD, and the Alaskan field office in Anchorage, AK.

The OESA Publications unit was also transferred to NMD, August 8, 1982, and now reports to the Assistant Division Chief for Information and Data Services.

RECENT AND COMING EVENTS

April 29--AMERICAN SOCIETY OF PHOTOGRAMMETRY, WESTERN GREAT LAKES REGION, Spring Meeting, Champaign, Illinois. Dr. Barry Jacobsen, Assoc. Professor, Univ. of Illinois Plant Pathology Department presented a talk entitled: "Use of Aerial Infrared Photography in Integrated Pest Management Systems", and Charles Danner, Jr., President of Danner and Assoc., Inc. spoke on the "Use of Aerial Photography to Locate Subsurface Farm Drainage Systems".

May 10--LANDSAT PUBLIC MEETING, NOAA, Butler University, Indianapolis, Indiana. This meeting will offer a status report on Landsat operations, systems, and the commercialization process. Half of the day will be reserved for open discussions on product prices, Thematic Mapper (TM) scene collection and processing priorities, and the critical need for value-added service industry involvement in the TM product activity.

For additional information or to register for this no-fee meeting contact: SES, P.O. Box 2697, Springfield, VA 22152, (800) 424-2733, ext. 328.

May 13--PUBLIC PRESENTATIONS, ENVIRONMENTAL REMOTE SENSING CENTER, Institute for Environmental Studies, University of Wisconsin-Madison. Union South, UW-Madison, 1:30 p.m. - 3:30 p.m.

Three presentations are planned on the collection, storage and analysis of land related information. The first will be a presentation by graduate students enrolled in the Environmental Monitoring Practicum on the results of a semester-long project aimed at mapping land use/land cover in the Madison area using various sources of remote sensing data. They will summarize the procedures used in their study of the Township of Westport and discuss the results obtained using the interpretation procedures tested. Dr. Thomas Lillesand, Director, Environmental Remote Sensing Center, will present the future potential for inventorying, mapping and monitoring Wisconsin's natural resources from space. The third presentation, led by Professor Ben Niemann, is entitled "Potentials for modernization of land records systems--an update on the Westport Land Records Project".

For more information, contact Professor Lillesand, Environmental Remote Sensing Center, 1225 W. Dayton St., Madison, WI 53706, (608) 263-3251.

June 20-24--LANDSAT IMAGES AND INTERPRETATION is a one-credit graduate course offered through the School of Library and Information Science of the University of Wisconsin-Milwaukee. Teachers, librarians, geographers and advanced students in these fields will be introduced to techniques for acquiring satellite imagery appropriate to particular research themes. The course will include extensive laboratory work in the American Geographic Society Collection's Landsat section. The cost to a Wisconsin resident is \$104.75; to others it's \$299.75. For more information contact the School of Library and Information Science, UW-Milwaukee, P.O. Box 413, Milwaukee, WI 53201, (414) 963-4707.

June 21-23--MACHINE PROCESSING OF REMOTELY SENSED DATA, with special emphasis on natural resources evaluations, is the ninth international symposium to explore state-of-the-art analysis of remote sensing data. The Laboratory for Applications of Remote Sensing, Purdue University is offering this 3-day symposium for \$175. Contact Douglas Morrison, LARS, Purdue University, 1220 Potter Drive, West Lafayette, IN 47906 (317) 494-6305.

June 24-25--WORKSHOP ON GEOGRAPHIC INFORMATION ANALYSIS will focus on the fundamental operations used in computer-aided map analysis. Application areas include wildlife habitat modeling, timber harvesting, site location and land use planning. For more information, contact Philip Swain, LARS, Purdue University, (address above).

NOAA PRICES FOR LANDSAT PRODUCTS AND SERVICES
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
WASHINGTON, D.C. 20233
April 1, 1983

TYPE OF PRODUCT/SERVICE	RETURN BEAM VIDICON & MULTI-SPECTRAL SCANNER		THEMATIC MAPPER		
	Present	Effective February 1, 1985	Present	Effective October 1, 1983	Effective February 1, 1985
Image Products					
70 mm film Pos (B&W)	\$26	\$30	---	NOT OFFERED	---
70 mm film Neg (B&W)	32	35	---	NOT OFFERED	---
10 in film (B&W; Pos)	30	35	\$38	\$50	\$75
10 in film (B&W; Neg)	35	40	42	60	80
10 in paper (B&W)	30	35	33	50	75
20 in paper (B&W)	58	65	70	95	140
40 in paper (B&W)	95	105	115	150	200
10 in film (color; Pos)	74	80	105	140	190
10 in paper (color)	45	50	75	115	170
20 in paper (color)	90	110	135	200	235
40 in paper (color)	175	195	235	275	290
Digital Products					
MSS Computer Compatible Tape (CCT), (full scene, 9 track, 1600 or 6250 BPI, 1 tape)	650	730			
RBV CCT single subscene (9 track, 1600 or 6250 BPI, 1 tape)	650	730			
RBV CCT full scene (9 track, 1600 or 6250 BPI, 4 tapes)	1300	1460			
TM CCT full scene (9 track, 6250 BPI, 4 tapes A,B)			2800 ^C	3400	4400
TM CCT, quarter-scene (9 track, 6250 BPI, 1 tape A)			750 ^B	925 ^B	1350
Services					
Color composite generation	195	220	290	305	325
Retrospective Orders to GSFC Archive				D	D
Special Acquisition					
•Delivery of MSS HDT via Communications Satellite - per scene	790	885			
•Delivery of Standard MSS Imagery (not color composite) - per scene	880	985			
•Delivery of MSS CCT or HDT - per scene	1000	1120			
•Acquisition of customer specified TM scene				1200 ^E	1600 ^E
•Surcharge for color composite generation for customer ordering acquisition -per scene	150	170	250	250 ^E	275 ^E
•Surcharge for specified minimum cloud cover -per scene	250	275		250 ^E	275 ^E

NOTES:

- A 1600 BPI tapes will be available; number of tapes to be determined.
B Expected to be available in mid- or late - 1983.
C TM SCROUNGE data is available on 9 track, 6250 BPI, 3 tapes or 1600 BPI, 7 tapes.
D To be provided later.
E TM Special Acquisitions may be implemented earlier than February 1985.