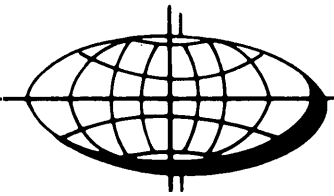
NATIONAL CARTOGRAPHIC INFORMATION CENTER



NEWSLETTER

U.S. DEPARTMENT OF THE INTERIOR/GEOLOGICAL SURVEY

SUMMER 1975

National Cartographic Information Center
U.S. Geological Survey
507 National Center
Reston, Virginia 22092
703-860-6045

Summer 1975

National Cartographic Information Center Newsletter No. 2

The publication of this issue has been delayed due to the siren call of annual leave and the general inertia produced by the langorous, if pollution-ridden stillness of deep summer in Northern Virginia.

We are introducing a new, more artistic cover design with this issue, courtesy of the Geological Survey's Visual Services group. The Newsletter's inner format is remaining exactly as it was - relentlessly simple, a decision occasioned by budget limitations as well as a personal preference not to spend more of the taxpayer's money than is strictly necessary.

Again, we are actively soliciting material from our readers. NCIC was created as a national center for the collection and dissemination of cartographic information. Our Newsletter's only justification for existence is to aid in NCIC's development by keeping the cartographic community of collectors, compilers, users, etc., informed not only of NCIC's activities but theirs as well. To become a sucessful medium of information exchange we need to hear from you in terms of whatever special interests, programs, products, or cartographic information in general you would like publicized. We are interested in receiving your news for possible publication whether it's postcard size or in manuscript form. (If it's in manuscript form, however, it had better be either extremely relevant or incomparably good.)

INTERAGENCY ACTIVITIES

U.S. Fish and Wildlife Aerial Photography Inventory

The U.S. Fish and Wildlife Service (FWS) has contracted with Photo Science

Inc. of Gaithersburg, Maryland to inventory specific types of single-coverage aerial photography of the United States. The resulting photo-indexes will be used by FWS to identify photographs which can be used for asembling a National Wetlands Inventory. Characteristics of the 1:24,000 to 1:130,000-scale, post-1969 imagery to be cataloged include film type, scale, date, camera type, focal length, photo quality, the holding agency and address, cost of contact prints, and the original purpose of the photography.

To assist the Fish and Wildlife Service, NCIC will be supplying inventory data for the Geological Survey, NASA, and most U.S. Department of Agriculture aerial imagery. In addition, we will be accompanying Photo Science on their visits to other Federal agencies and various State governments. When completed, the information contained in the inventory will be available to the public through NCIC.

NCIC-SCS Cooperative Agreement

Our most recent exchange of cooperative vows was formalized in late May with the Soil Conservation Service (SCS) and governs cartographic information management. The Agreement's import stems as much from the spirit of SCS's decision to share in the development of NCIC as a national center for information exchange as from what was formally stated on paper. However, in the interest of letting our public know what NCIC is agreeing upon and with whom, we are printing a quick rundown of the major provisions.

Under this Agreement SCS will:

- Share in the formulation of NCIC plans, systems, and standards through conferences and workshops.

- Share in the development and maintenance of NCIC information files by submitting both summary and unit records of aerial imagery holdings and plans.

- Send NCIC their information on completed soil surveys and future plans, so NCIC, in turn, can inform customers.

- Be listed as a source of aerial imagery and soil survey data in NCIC's information systems and agree to fill orders received from either NCIC or our customers for such data.

- Work with NCIC to identify other SCS data that should be included in NCIC's information systems.

In turn NCIC will:

- Provide SCS with information on existing cartographic data and

- and plans of other organizations participating in NCIC's information network.

- Provide standardized guidelines, formats, and codes enabling SCS to enter aerial photography data into NCIC's summary record system for aerial photography.

- Establish an efficient system for accepting orders at NCIC offices for data held by SCS.

Similar agreements are being negotiated with the Agricultural Stablization and Conservation Service, Forest Service, Tennessee Valley Authority, National Ocean Survey, and Environmental Protection Agency. Agreements have reached the drafting stage with the Defense Mapping Agency, Bureau of Land Management, Bureau of Indian Affairs, Library of Congress, National Archives and Records Service, and the Bonneville Power Administration.

NCIC Obtains ASCS Aerial Photography Indexes

The Agricultural Stabilization and Conservation Service (ASCS) has begun the transfer to NCIC of a duplicate file of their current aerial photography indexes. This file summarizes an extensive collection of aerial photographs and is stored on approximately 13,000 separate microfilm aperture cards.

ASCS's collection of aerial imagery was compiled as a result of the agency's role as administrator of specific commodity and related cropland programs. By aerial photography, ASCS used to keep track of who raised what in America and whether they were living up to their acreage agreements. For all but four commodities this program has been abandoned, but the resulting aerial imagery remains highly useful for various county-related programs as well as for numerous other applications.

When the entire file has been received and ordering procedures set up in our User Services Section, NCIC will be capable of filling requests that require ASCS imagery without having to direct long-suffering customers to yet another agency. Our Data Acquisitions people have high hopes of setting up the complete index file within the current calendar year.

NCIC PROFILE

NARS Cartographic Archives Division

With the Bicentennial almost upon us, Ralph Ehrenburg of the Cartographic

Archives Division of the National Archives and Records Service would like to remind our readers that his Division is "the official repository for permanently valuable noncurrent cartographic records of the United States." In other words, the Division possesses a wide variety of historical maps and related fascinating data compiled over the last 180 years by various agencies of the Federal government

The Archives has approximately 1,800,000 maps, more than half of them original map manuscripts. Their holdings date from the early 1800's on and are divided into categories dealing with early exploration and scientific surveys (Lewis and Clark, Fremont, et al.) public surveys and settlements, Indian affairs, hydrography and navigation, natural resources, population, urban development, international affairs and boundary surveys, and military compaigns.

The Division also houses a collection of some 2,225,000 aerial photographs. These range in time and location from 1918 imagery of World War I France to 1950 aerial photographs of Suitland, Maryland. The bulk of the Archives' aerial imagery, flown over the United States, forms a fascinating record of pre-World War II America and a valuable index to the country's growth.

Information on ordering reproductions of maps and contact prints or enlargements of the Archives' aerial photographs can be obtained from the Cartographic Archives Division, National Archives, Washington, D.C. 20804.

The Archives also publishes a well-organized, informative pamphlet entitled, fittingly enough, "Cartographic Archives Division, which offers an excellent introduction to the Division's general holdings, reference services, publications, and records of unpublished finding and research aids. It's free.

National Geodetic Data Base

NCIC is coordinating a transfer of U.S. Geological Survey geodetic control survey information to the National Geodetic Survey Information Center (NGSIC). As a result of an agreement between the Survey and the National Oceanographic and Atmospheric Administration (NOAA) coordinates, descriptions of survey markers, and abstracts of field observations compiled during USGS geodetic surveys will be digitized by the Geological Survey's Mapping Centers into a computerized form for storage at NGSIC. The Geological Survey data consist of some 500,000 marks and may require preparation of ten million records for computer storage.

Transfer of Geological Survey data to the National Geodetic Control File will enable NGSIC to compile comprehensive geodetic information for publication by computer-generated listings. The Survey data will also reinforce the planned readjustment of the existing surveys to a new national datum.

Under the terms of the agreement, NCIC will function as an order-taking agent for information stored in the National Data Base. NGSIC is charged with keeping NCIC's User Services Section up-to-date on information available from the Data Base.

NCIC SYSTEMS - MINOR ANATOMIES OF TWO MAJOR SYSTEMS

Aerial Photography Summary Record System and Workshops

In March and June, NCIC sponsored two workshops with Federal agencies on NCIC's requirements for coding photographic data for entry into our Aerial Photography Summary Record System (APSRS).

A tabular graphic output from APSRS is designed to show, at a glance, areas covered by aerial photogaphpy with additional details furnished in textual form. When the system is fully operational, a potential customer's order will be taken or he will be referred immediately to the agency or private company having the photographs he needs, rather than being forced to search the data base of every organization remotely involved in aerial photography in his area of interest.

APSRS data records contain the minimum information required for a summary level data base. Each record is structured to allow the data to be encoded on either a county or 7.5 minute quadrangle basis.

Each record within the data base is uniquely identified by an agency code and a record number. The remaining data fields on each summary record contain information on the location, scale, film type, date, cloud cover, and imagery status, i.e., planned, in progress, or completed. A typical summary record can reference all of the photographs taken over a large geographic area by the same agency, using the same type of camera and film at the same scale and during the same field season.

Most Federal agency users of photography have now been briefed on the benefits of the system with emphasis on NCIC's need for agency input and cooperation. Excellent technical feedback was received concerning the system's data field, output requirements, and the intent of agencies to review their data base for possible input.

In early fall, efforts will be undertaken to program the aerial imagery data of all remaining Federal agencies, States and private companies. To this end, five regional workshops have been tentatively scheduled for Boston, Atlanta, St. Louis, Denver, and Menlo Park (California) to explain entry requirements. If you are interested in finding out more about the Aerial Photogaphy Summary Record System, write or call (information on page one) J.R. Swinnerton, Chief, National Cartographic Information Center.

Expanded Terminal Network for Aerial Photography

As part of our continuing campaign to inform our readers of the technological waves of the future, we are including some information on recent innovations in ordering systems within the Federal government for satellite imagery and standard aerial photographs of the United States.

There are thousands of frames of remotely-sensed imagery and aerial photographs of America produced every year. Developing systems that can index, sort, and retrieve specific imagery from among the seemingly endless rolls of film has long been an unwieldly, not to mention rapidly growing problem. A promising solution emerged in 1973 when the Earth Resources Observation System (EROS) Program of the Interior Department opened a computered-supported Center for aerial and space imagery in Sioux Falls, South Dakota. The Center is capable of automatically performing complete computer searches of its six-million-image data base, and handling a variety of reproduction processes for the public with ease.

NCIC modesty admits to playing an active role in developing programs to ensure nationwide utilization of the EROS data Center's facilities by setting up remote computer terminals at the U.S. Geological Survey's Mapping Centers in Denver, Colorado, and Rolla, Missouri, in addition to our own terminal in Reston, Virginia. Each terminal contains a "browse file" of microfilm cassettes containing 16mm copies of all available satellite and USGS and NASA aerial imagery of the United States. Using specific geographic coordinates, the individual remote terminals can query the EROS Data Center's main computer and receive immediately, via electronic typewriter-telephone hookup, comprehensive listings of all suitable imagery for a particular area of land. Microfilm viewers are used to scan the computer-indicated frames. Once the desired imagery has been selected, specific orders are transmitted to the Sioux Falls computer where they are processed and the finished product mailed to the customer.

In addition to NCIC's terminals, the EROS Program has set up Applications Assistance Facilities in Bay St. Louis, Mississippi; Fairbanks, Alaska; Menlo Park, California; Phoenix, Arizona; and Reston, Virginia. Each facility contains microfilm duplicates of the Sioux Falls data base and offers computer terminal inquiry facilities as well as ordering capability and highly technical information assistance to customers. For more information on the EROS Program contact NCIC's User Services Section.

NEW PRODUCTS

We are starting, with this issue, a section of new cartographic products available to the mapping community. To NCIC's benevolent godfather, the U.S. Geological Survey, we are especially indebted for information.

NOS-U.S. Geological Survey Topographic-Bathymetric Map

For those of our reading public who have dealt with the frustration of having to buy different products from different agencies when crossing the magic Federal line between land maps and sea charts, we announce the publication of an experimental topographic-bathymetric map of the Beaufort, North Carolina region. The Beaufort map, the only one of its kind in existence as as yet, is a prototype for a proposed new series of topographic-bathymetric maps that will cover all the coastal regions of the United States in a variety of standard mapping scales.

Produced jointly by NOS and the Geological Survey, the map shows both the topography of the land at 25-foot intervals and water depth every 2 meters to the 200-foot depth and every 10 meters in deeper water. Measuring 4 by 32 inches, the map covers almost 8,000 square miles of North Carolina's coastal zone at a scale of 1:250,000 (1 inch equals almost 4 miles).

According to the press release issued jointly by NOS and the Geological Survey, the map is designed to serve the needs of "oceanographers, marine geologists, land-use planners, physical scientists, environmentalists, conservationists and others having an interest in the management of coastal zones."

NCIC endorses this product without reservation. Aside from being a valuable and informative map and an encouraging example of interagency cooperation, it shows some very real possibilities for reducing some of the clutter currently existant in our line of work.

Copies may be purchased by mail from the Geological Survey's Arlington, Virginia Branch of Distribution at 1200, South Eads Street 22202, or from the Distribution Division of the National Ocean Survey, C44, Riverdale, Maryland 20840.

New Intermediate Scale Base Map Series

In response to a growing clamor by map users, the Geological Survey is at last producing a series of intermediate scale (1:50,000 and 1:100,000) base maps. In June, the first of the series, an experimental 1:100,000-scale map of the Reno Junction, Wyoming area in a 30 by 60 minute format, was released for public consumption with others expected to follow shortly.

The new series, which is to be metric, will enable Federal and civilian organizations to meet a variety of specialized mapping needs with a single set of base maps. The Survey plans to accomplish this minor miracle by using feature-separation printing plates scribed with individual map features (such as roads, contours, lettering, etc.). The plates can be easily and inexpensively combined into five negatives and overprinted to

form either basic information or specialized maps.

The sum of such printing, scale, and measurement innovations is a highly flexible product with numerous applications. To the series' base maps Federal and State agencies can add their own classifications of land or land-use, geology, soils, etc. For example, the 1:100,000-scale will be initially used by the Bureau of Land Management and the Soil Conservation Service to produce maps dealing respectively with mineral ownership (like the Reno Junction map) and farmland use.

On the State and local level the intermediate scales of the series are expected to encourage interest in unified regional planning. Previously, regional planners had to use either the excessively detailed (for their purposes) 1:24,000-scale maps or the 1:250,000-scale series that usually covered too large an area at too small a scale.

In addition, the feature-separation guides integral to the series will be used to supply regional planners with a wide variety of cultural information vital to large area planning. Along these lines, the Geological Survey with the assistance of Colorado, Georgia, Pennsylvania, and Virginia has already used the series to compile county-wide base maps on the large 1:50,000-scale.

For further information on the intermediate scale map series, write the Chief, Topographic Division, U.S. Geological Survey, 516 National Center, Reston, Virginia 22092.

Annual Report

For the research oriented among you, we have instructions on how to order copies of the Annual Report on Research and Development in Topographic Mapping, prepared by the Topographic Division of the Geological Survey. Started in 1965 on a semiannual basis and published yearly since 1969, the Annual Report summarizes the research work going on at Geological Survey Mapping Centers scattered across the country as well as at the Eastern Mapping Center, Office of Research and Technical Standards, and Special Mapping Center located in Reston, Virginia. The Report, an important reference on Federal mapping research activities, covers field surveying, photogrammetry, cartography, orthophotomapping, space technology, and new publications. Each category deals with future, current or just completed studies.

The 1975 Annual Report was published in late July and copies may be purchased from the National Technical Information Service using accession number PB243 596/AS. Microfiche copies cost $2.25 each and paper copies $4.75. The ordering address is P.O. Box 1553, Springfield, Virginia 22161.

Digital Terrain Tapes

After nearly a decade of strict servitude within the federal government, the bulk of the Defense Mapping Agency Topographic Center's (DMATC) digital terrain tapes of the contiguous United States are ready for public distribution. NCIC has acquired approximately 70 percent of the tapes to date, and we expect to have the balance in hand by the end of the current fiscal year.

Digital terrain tapes are composed of a latticework of elevation points digitized from 1:250,000-scale topographic quadrangle maps. The tapes have broad applications for the study of difficult terrain and land management problems by direct computer processing. The 1:250,000-scale maps the tapes were compiled from usually cover one-degree of latitude by two degrees of longitude. For this reason, two one-degree grids were prepared at DMATC during the original digitizing of each quadrangle. Labeled as either East or West, each half-quadrangle block was stored on one seven-track computer tape produced by a UNIVAC 1108 computer. Before coming to NCIC, up to eight one-degree quadrangles of latitude/longitude were run onto a single nine-track tape at a density of 1600 bytes-per-inch. (If desired, 800 bpi tapes holding four blocks of quadrangle information can be ordered.)

If you want to order digital terrain tapes, an index and complete ordering information is available from our User Services Section. For additional technical information, User Services will send on request, two short, descriptive papers, the NCIC Digital Terrain File and the NCIC 1:250,000-scale Digital Terrain Library. The Terrain File describes the physical and logical organization of data contained on the tapes. The Terrain Library paper gives further information on each one-degree block available. Highly technical questions can be referred to the Office of Research and Technical standards, 519 National Center, Reston, Virginia 22092, telephone 703-860-6291.

Each digital terrain tape cost $15. Each block of data on the tapes costs an additional $6 for regular processing and $10 for priority processing which guarantees two-day turnaround on the computer (mailing time is in the hands of God and the Postal Service.) For example, the cost of priority processing for two block on one tape would be $35 ($15 plus 2 x $10 = $35). If these calculations are confusing write to User Services for more information.

MEETINGS AND CONVENTIONS

For the laggards among our readership who either haven't shaped up their attendance plans or who have successfully avoided seeing information of this

kind, we are closing this issue with a listing of the remaining national and international conventions and meetings of the 1975 cartographic season. This list is not meant to be taken as the full gospel since there are doubtless some meetings we did not receive notification of.

Thirty-fifth Photogrammetric Week	Stuttgart University, Stuttgart Federal Republic of Germany September 8-13
International Symposium on Computer Assisted Cartography, Auto-Carto II	ACSM-Bureau/Census Sheraton Inn & International Conference Center Reston, Virginia September 21-25
Annual Meeting of the Geological Society of America	Salt Lake City, Utah October 20-22
Coastal Zone Surveying and Mapping	St. Petersburg, Florida October 21-23
W.T. Pecora Memorial Symposium	Sioux Falls, South Dakota October 28-31
ASP-ACSM Fall Technical Meeting	Phoenix, Arizona October 28 - November 1
ASCE National Convention	Denver, Colorado November 3-7
Environmental Applications of Multi-spectral Imagery, USA-ETL	Fort Belvoir, Virginia November 11-13
Venezuelan Congress of Geodesy	Maraciabo, Venzuela December 1-6

ADDRESS INDEX (by articles)

U.S. Fish and Wildlife Inventory

Photo Science Inc.
7840 Airport Rd.
Gaithersburg, Maryland 20760

Office of Biological Services
U.S. Fish and Wildlife Service
Dept. of Interior, Washington, D.C.
20240

NCIC-SCS Cooperative Agreement

Cartographic Division
Soil Conservation Service
Federal Building
Hyattsville, Maryland 20782

ASCS Aerial Photography Indexes

Aerial Photography Field Office
USDA, Admin. Services Division
2505 Parleys Way
Salt Lake City, Utah 84109

NARS Cartographic Archives Division

Cartographic Archives Division
National Archives
Washington, D.C. 20408

National Geodetic Data Base

Director, National Geodetic Survey
Information Center (C-18)
NOAA, NOS, NGS
Rockville, Maryland 20852

Aerial Photography via Terminal Network

EROS Data Center
Sioux Falls
South Dakota 57198

EROS - Applications Assistance Facilities

University of Alaska
Geophysical Institute
College, Alaska 99701 (Fairbanks)

U.S. Geological Survey
Rm. 202, Building 3
345 Middlefield Rd.
Menlo Park, Calif. 94025

Aerial Photography via Terminal Network Cont'd

EROS - Applications Assistance Facilities

U.S. Geological Survey
Rm. 5017, Federal Building
Phoenix, Arizona 85025

U.S. Geological Survey
1925 Newton Square East
Reston, Virginia 22090

U.S Geological Survey
Rm. 8-210, Building 1100
National Space Technology Lab
Bay St. Louis, Mississippi
39520

Topography-Bathymetric Map

Branch of Distribution
U.S. Geological Survey
1200 South Eads Street
Arlington, Virginia 22202

National Ocean Survey
Distribution Division (C-44)
6501 Lafayette Avenue
Riverdale, Maryland 20840

Information on Intermediate Scale Base Map Series

Office of the Chief
Topographic Division
U.S. Geological Survey
516 National Center
Reston, Virginia 22092

Annual Report

National Technical Information Service
P.O. Box 1553
Springfield, Virginia
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Digital Terrain Tapes

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