Western Association of Map Libraries

"...to encourage high standards in every phase of organization and administration of map libraries..."

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University of California
Berkeley, CA 94720
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in every phase of the organization and administration of map libraries."

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Editor: Stanley D. Stevens c/o University Library
Map Librarian University of California
phone: (408) 429-2364 Santa Cruz, CA 95064
(ATSS 529-2364)

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WESTERN ASSOCIATION OF MAP LIBRARIES (WAML)

Leadership for 1978/79 Membership Year

President
△ Frances Woodward
Special Collections Division
University Library
University of British Columbia
Vancouver, B.C. V6T 1W5

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△ David W. Schacht
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University Library
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Map Center
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§ David W. Schacht
Map Library
University Library
Oregon State University
Corvallis, Oregon 97331

§ Muriel Strickland
Social Science Research Laboratory
San Diego State University
San Diego, California 92182

§ Maureen Wilson
Map Division
University Library
University of British Columbia
Vancouver, B.C. V6T 1W5

* 2-year term appointment
§ 1-year term appointment
△ 1-year term elected
± indefinite appointment
WAML  WESTERN ASSOCIATION OF MAP LIBRARIES Spring Meeting, March 29-30, 1979, at the

NCIC  NATIONAL CARTOGRAPHIC INFORMATION CENTER, 345 Middlefield Road, Menlo Park, CA 94025, with

NMA  NATIONAL MICROGRAPHICS ASSOCIATION equipment and products representatives participating.

Theme:  Cartographic Microform Users + Producers = Future Partnerships

THURSDAY, MARCH 29, 1979

1:00 p.m.  Registration.
1:15      Call to order: Ms. Frances Woodward, WAML President
          Welcome to the Western Mapping Center: Mr. Richard
          Swinnerton, Chief, WMC
1:30      WAML Business Meeting
2:00      Announcements and Reports
3:00      Special Guest Speaker: Dr. Helen Wallis, Map Librarian, The British Library: "Map Librarianship in Europe and the United Kingdom"
4:00 - 5:00  NCIC/Public Inquiries Office (PIO) open house.
Dinner...........To be announced.

FRIDAY, MARCH 30, 1979

8:00 a.m.  National Micrographics Association (NMA) displays.
9:00      NCIC programs, Western Region: Mr. Lee Ageers,
          Chief, NCIC-W
9:15      Western Regional Library - Activities/Services: Ms. Jacquelyn Freeberg, Librarian, WMC/USGS
9:30      Public Inquiries Office - Activities/Products: Ms. Margaret Deam, NCIC-W
9:45      NCIC - Data Acquisition/Activities: Mr. Jerry Greenberg, NCIC-W
10:00     NCIC - Technical Services/Activities: Mr. Moyle Stewart, NCIC-W
10:45     Remote Sensing Imagery - Format Type, Applications, and Equipment needed: Mr. Moyle Stewart, NCIC-W
11:00     Microform Products from: NCIC - Reston: Mr. Mike Sety, NCIC; EROS Data Center: Mr. Lee Ginnado, EDC; NCIC - Western: Ms. Sue Sullivan, NCIC-W
1:00      Western Mapping Center tour
3:00      Current Work at USGS Research - New Products: Mr. Dean Edson, USGS
THE NEW MAPPING OF MEXICO
by
Carlos B. Hagen
Director
UCLA Map Library
Los Angeles, California

What has happened in Mexico in recent years, in terms of mapping, availability of maps and education of the public in their use, amounts to what is probably one of the most remarkable and revolutionary developments in the history of modern cartography. What makes this entire process even more impressive is that it has taken place in the short period of one decade.

These developments have also had profound repercussions for scholars and map libraries of the United States. The events in Mexico in the last ten years seem even more extraordinary if we take a quick look at the recent history of mapping in that country. Ever since the 19th Century, Mexico had been partially mapped by a myriad of series and partial projects. Some series had been started by various Mexican federal agencies or state governments. Others had been undertaken by U.S. agencies while others had been begun by even private and foreign agencies. The overall cartographic output represented a dizzying variety of scales, formats, standards and sizes. However, no series at a large or medium sized scale had ever been fully completed.

In 1968, Ernesto Jáuregui O. published a book* describing the many series and agencies involved in the contemporary mapping of Mexico. A perusal of this book is a fascinating and complex task. It shows an unbelievable array of overlapping series and incomplete projects. It is also a sad experience, because it reflects a monumental duplication of labor and seemingly a terrible situation of lack of communication and conflicting interests between many government services and agencies.

What could be described as the modern topographic mapping of Mexico began shortly after World War II. Two major agencies soon split this task. The general, small scale topographic maps (mainly the series at a scale of 1:500,000) were the responsibility of the Secretaría de Agricultura y Ganadería, through its Dirección General de Geografía y Meteorología. Large scale topographic mapping (series at the scale of 1:250,000 and larger) became the responsibility of the Secretaría de la Defensa Nacional, through its Departamento Cartográfico Militar.

Up to the late 1950's, the large scale mapping of mainly the central part of the country and especially the Valley of Mexico progressed at a slow pace and some of these sheets were made available for sale to civilians and to American colleges and universities. However, it seems that the Cold War and internal political developments had a negative effect on this limited availability, and soon the sales were suspended; a situation that would last for about a decade. Thus, suddenly, large scale maps of Mexico, that is, the series produced by either the Mexican Army (its Departamento Cartográfico Militar) or the U.S.

Army (the Army Map Service) became totally unobtainable even to qualified scholars and civilian users, even if they were citizens of Mexico. It was a terrible period for anyone doing field research work demanding large scale maps of Mexico. A famed series of this time, (1:250,000) covering the northern half of Mexico (series F 501), was the product of a joint venture of the Departamento Cartográfico Militar and the U.S. Army Map Service. This series, needless to say, was intended only for the internal use of Mexican and American military authorities and it was never offered for public sale. However, in the late 1960's, some of the sheets of this series somehow fell into the hands of some enterprising individuals who quickly began marketing -- and at very stiff prices -- blue line prints of these sheets. It was a regrettable case of black-marketing, yet the demand for maps of Mexico was so acute that most libraries and users had no other choice but to pay a high price for these very poor reproductions.

Perhaps one of the saddest cases that well illustrates this terrible situation is one that involved our UCLA Map Library. One day, in the late 1960's we received a letter from a Professor of Geography from one of the largest Mexican state universities. He pleaded for us to send him Xerox copies of any large scale sheets, even old ones, that we might have in our collection covering areas of Mexico that he needed for his field research. It had been impossible for him to obtain modern topographic maps of these areas from the Mexican military authorities. But this was not an isolated case. Around this time, at meetings of geographers, geologists or map librarians, stories such as this one circulated profusely: theses, dissertations, and articles remained incomplete, often for years, because of the lack of adequate maps; field areas of research had to be mapped by hand or in a schematic form; scholars -- Americans as well as Mexican -- had to wait, sometimes for years, in order to acquire a particular topographic map or aerial photograph for their areas of study.

Suddenly, the incredible and unexpected happened: this unfortunate situation was completely reversed. Responsible for the change was a new organization: the Comisión de Estudios del Territorio Nacional (CETENAL). It was created by President Gustavo Díaz Ordaz, and came to life on the first day of October, 1968. Especially when one looks at these developments in retrospect, one realizes it was a most important and visionary step for Mexico. The purpose of CETENAL was to centralize, under a single major national organization most of the mapping activities of Mexico. President Díaz Ordaz considered this organization so important and so vital for the progress and development of the country, that he placed it directly under the authority of the Secretaría de la Presidencia. Under the direct leadership and sponsorship of President Díaz Ordaz, CETENAL was given all adequate support and every facility for the gigantic task ahead. From the beginning, it was staffed with hundreds of young civilian scientists and technicians eager to bring a new image of efficiency and high quality to the vital process of adequately mapping the entire country.

But perhaps even more important than the technical aspect was the unprecedented scope of the concepts and aims that CETENAL established for itself. Their goal was to change, in a matter of a few years, what one might call the "cartographic consciousness of Mexico". We have to remember that until that time, maps for most Mexicans were merely luxury items or esoteric, complex tools that only engineers or earth scientists could use and understand, or
even worse, military documents surrounded with all sorts of connotations of secrecy and military operations.

The task obviously was far from easy, in spite of the wholehearted support of President Díaz Ordaz. Not only did a nation of over 50,000,000 people have to be given a new "cartographic consciousness", but on the internal and political level, the newly born CETENAL had to contend with the many natural fears and jealousies of a number of other institutions that saw in it a formidable competitor. Another important source of fear and opposition came from certain military circles who expressed the well known fear of the military establishments of many other countries: namely, that making available to the general public detailed maps of the national territory could eventually prove to be of benefit to subversive and guerilla movements, or to a potential hostile foreign power intent on invading the country. These arguments can of course be easily dispelled. On the one hand, generally, native subversive guerilla movements know the local terrain better than government forces, and, for them maps are generally of secondary importance. On the other hand, concerning foreign powers or invaders, one has to remember that by this time it is very likely that through high resolution satellite pictures, both the U.S. as well as the U.S.S.R. probably had better aerial coverage of Mexico than the Mexican authorities themselves. Fortunately for Mexico, these fears and heated arguments did not have enough weight, and CETENAL continued its monumental task with full presidential support.

At this point it is important to briefly discuss the impact that this situation had in the United States, especially if one remembers the virtual starvation that American scholars and libraries had for good quality maps of Mexico. By the early 1970's a rather curious development began to be observed by a growing number of scholars and libraries in the United States. We began to receive, from an increasing number of Mexican dealers and booksellers, announcements of the new availability of high quality large scale topographic maps. Each offer included a tantalizing index of maps and lists of new available sheets. However, all the maps and literature included had the official addresses carefully cut out, or else they were obliterated with heavy ink, and, superimposed, one would find new prices expressed in U.S. dollars; prices that sometimes were as high as ten to fifteen times the actual price of the maps. It is obvious that many of these dealers and book stores were quickly capitalizing on the starvation of U.S. scholars and libraries for Mexican maps. I have no doubts that many of these entrepreneurs made small fortunes selling these maps to eager scholars and librarians of the United States.

Soon the knowledge of what was happening in Mexico spread all over the U.S., and there were hundreds of orders for the new maps placed directly with the various CETENAL agencies. However, by 1975 - 1977 there were increasing reports that the letters and orders for CETENAL maps were not being answered or filled. Thus a new wave of scare rumors began to spread among interested prospective buyers in the U.S. Many feared that internal political developments, or the election of a new President, or pressures from the military might have signaled a new policy of making all of those newly produced materials as unavailable as before. Later we have learned that nothing of this kind actually took place. That period of silence was mainly due to problems dealing with internal growth and reorganization, and the virtual inability of CETENAL to fulfill hundreds upon hundreds of mail orders that kept flooding their offices from all over the world, and, orders from buyers wanting to acquire the newly
produced maps. This situation, and flurry of rumors, was again used to great advantage by a number of dealers, both from Mexico as well as the U.S., who began offering for sale the newly produced maps -- that seemingly could not be obtained through direct orders from Mexico -- again, at very stiff prices. What actually was happening during this period was that due to the virtual avalanche of mail orders, CETENAL did not have the human resources to fulfill these orders, and could mainly handle only sales "over-the-counter". But the prices and availability of their cartographic products were the same. All through this period the maps could still be obtained "over-the-counter" at the standard price of 20 pesos each (that is, about 80¢ each). Yet, a number of American dealers were offering these sheets -- that their messengers could conveniently pick up in one trip in large numbers -- at prices in the neighborhood of $3.00 per sheet; that is an overcharge of nearly 300%! This situation again well describes the speculation that took place. On the one hand, the demand for maps of Mexico was very heavy. And, on the other hand, the fears concerning the possibility of a return to a highly restrictive policy on the part of the Mexican government was made real due to unfilled mail orders and inquiries.

However, by 1978 the situation concerning availability of newly produced Mexican maps greatly improved. CETENAL became an even more important and larger agency. It was upgraded to a new level of national importance -- it now became Dirección General de Estudios del Territorio Nacional (DETENAL) -- and 9 field offices were established throughout Mexico in order to better coordinate its work, and especially the distribution of its products. Besides 3 main locations and distribution centers in Mexico, D.F., DETENAL has established additional field offices in León, Guanajuato; Guadalajara, Jalisco; San Luis Potosí, San Luis Potosí; Monterrey, Nuevo León; Chihuahua, Chihuahua; and Mexicali, Baja California Norte. In addition, it has established a rapidly growing network of private franchised dealers.

By mid-1978, several map libraries in California were greatly surprised to receive the personal visit of Mr. Enrique Samper Blasco, the Chief of the DETENAL field office in Mexicali, Baja California Norte. Mr. Samper Blasco, showing an immense interest and sympathy for the work of map libraries in California, visited several of these libraries on his own initiative and time in order to better explain the work of DETENAL, its system of production and distribution, and to assure the various map librarians visited that they would have the fullest cooperation from the Mexican authorities in the obtention of all cartographic products produced and distributed by DETENAL.

DETENAL's Current Program

From what I have described so far, one can realize why the last decade in Mexico has been one of a true and monumental revolution in cartography. Even a mere description of DETENAL's main accomplishments in a single decade of existence is enough to stagger the imagination:

About 2/3 of the country has been mapped according to the best modern standards. Presently DETENAL produces an average of 125 new maps every month. Considering their high quality and the immense amount of labor and data they represent, this output is comparable only to that of countries with the most advanced technology and a well established cartographic tradition.
Aerial photography for about 4/5 of the country has been completed in black-and-white with high altitude flights.

Aerial photography for about 1/2 of the country has been completed both in black-and-white as well as in color using low altitude flights.

Besides the basic series at the scale of 1:50,000, DETENAL has also completed or is well into completing many other series: e.g., touristic, aeronautical charts, climatic maps, and, especially worth mentioning, a large number of very detailed city plans compiled using the latest aerial photography data and computer techniques.

The basic series at the scale of 1:50,000 has to be especially mentioned for a development that is virtually unprecedented in contemporary cartography: that is, each basic topographic sheet at this scale is also issued in four additional versions. They are:

The "Carta Geológica" that shows the geology of each particular sheet. This is achieved through both field reconnaissance as well as photo interpretation of low altitude color photography.

The "Carta Edafológica" that shows for each sheet the classification of soils according to their physical, chemical and biological characteristics. For this purpose the FAO-UNESCO 70 classification of soils has been adopted. The compilation is done through both field reconnaissance as well as photo interpretation of low altitude color photography.

The "Carta de Uso del Suelo" that shows for each sheet the actual use of the land (farming, forests, grazing, industrial and urban areas, irrigation systems, etc.). The compilation is also achieved through a system of both field reconnaissance as well as photo interpretation of low altitude color photography.

The "Carta de Uso Potencial del Suelo" represents a most interesting development aimed at economic planning. These sheets show the potential use and capacity of the soil considering a number of parameters related to climate, topography, soil classification, water availability, urban expansion, etc. The data shown is compiled from the other sheets mentioned above as well as through methods of field reconnaissance and photo interpretation of low altitude photography and using also a number of modern techniques of computer mapping.

To gain an approximate idea of the monumental task undertaken by DETENAL, imagine for a moment that each topographic sheet produced by the U.S. Geological Survey would also be accompanied by four additional sheets showing the various elements described above. All the tasks and projects described so far have been undertaken within a conceptual framework that is most
remarkable. This framework combines the most advanced methods of efficiency, openness and introduction of new techniques, and yet preserves the very national character of the task; something that shows well in the final products. A brief mention of some of these concepts will clarify this overview.

a) Although DETENAL is the centralized and by and large the most important national mapping agency of Mexico, it still allows a number of other specialized agencies to continue their own mapping activities. For example, nautical charts or topical and specialized maps showing various parameters of economics or social studies, etc. are still being produced by various specialized agencies.

b) Although at the beginning DETENAL faced some natural opposition and fears from a number of other sectors, their speed and efficiency and the high quality of their maps have gained for the agency well deserved respect and admiration in all governmental and political sectors of Mexico.

c) DETENAL's maps, and especially their basic series at the scale of 1:50,000, do not have the "Army Map Service appearance" of so many other maps and series produced in foreign countries, the formats and standards of which are practically carbon copies of the standards established in the 1950's by the U.S. Army Map Service. DETENAL's maps are produced with similar high standards of quality and graphic presentation, yet they preserve a very unique and attractive "Mexican appearance". The standard topographic sheets, for example, do not have the rather harsh appearance of the topographic quadrangles produced in the United States. DETENAL's maps have a softer, very attractive and highly readable design, similar to the best maps presently being produced in Western Europe.

d) DETENAL, overcoming some internal criticism and resistance, has insisted that all of its products have to be open and available to anyone who wishes to acquire them, Mexican nationals as well as foreign users. This applies not only to the maps but also to other data and products such as provisional maps, high and low altitude aerial photography, geodesic and surveying information, and even computer mapping data.

e) DETENAL has also insisted on keeping the price of the maps and other cartographic products at the lowest possible rate in order to make them available to as wide a consuming public as possible.

f) The efforts described have been accompanied by a massive campaign to educate the Mexican people in the use of maps so as to give to the country a "new cartographic consciousness". As explained earlier, until only a few years ago, maps for most Mexicans were just luxury items or complex tools to be used only by geographers or engineers or were considered dangerous military documents surrounded by secrecy and restrictions. The ultimate purpose of DETENAL is to bring to Mexico a "cartographic consciousness" similar to the one that can be seen in
countries such as England, Germany, Switzerland, or France; countries where such a consciousness developed in a period of one or two centuries of intense mapping activities and use of the maps by the average citizen. Yet the remarkable aspect of DETENAL's campaign is that it is working exceedingly well. Presently maps are being increasingly used not only by professionals and college graduates, but by truck drivers, farmers, salesmen, the general public and even peasants. To encourage a wider knowledge and appreciation of maps, DETENAL is engaged in a gigantic campaign to distribute its maps through every possible outlet. Thus presently their maps are being distributed by an increasing number of book stores and even by some large department stores (e.g., Woolworth).

Summary of the Decade - Hope for the Future

In conclusion, let us summarize for a moment the situation surrounding cartographic materials that existed only some ten years ago in Mexico:

In 1968, a Mexican Professor of Geography wrote to the UCLA Map Library pleading for copies of any large scale maps that might cover his area of research as he could not obtain those maps in Mexico;

Rampant speculation and black-market in the United States of virtually any large scale maps of Mexico that smart operators could obtain and then peddle to scholars and libraries;

Hundreds of field projects, theses, dissertations, and research undertaken by American as well as Mexican scholars subject to long delays or even lack of completion, due to the impossibility of obtaining adequate maps;

The few large scale maps of Mexico that had been produced surrounded with the most unreasonable restrictions and military secrecy;

Utter frustration on the part of any map librarian, earth scientist or geographer trying to obtain large scale maps or aerial photographs of Mexico.

If one remembers this overall situation that occurred only a decade ago and compares it with the present developments brought about by DETENAL, then one can truly state that what has happened in Mexico in this short period is one of the most remarkable and revolutionary developments in the world of cartography. It is no doubt a magnificent example that one wishes many other countries of the world would follow. To sum it up in a few words: a climate of secrecy, fear, unreasonable restrictions, and even paranoia, has been replaced by a "cartographic revolution" not only monumental and staggering in its magnitude, but immensely visionary in its concepts of freedom and openness. It is a true revolution, a source of faith, confidence, and the earnest hope that many other countries will eventually follow the example of Mexico.
Acquisition of DETENAL Maps

As a corollary to the preceding article, I would like to add a few comments and suggestions regarding the acquisition of cartographic materials from DETENAL.

As of 1 January 1979, DETENAL raised the price of maps to 100 pesos each, except tourist maps which are priced at 25 pesos each. As before, all purchases must be prepaid. The prices are fixed, flat rates, and no discounts of any kind are allowed to any purchaser, Mexican or foreign, educational, commercial or private.

The basic philosophy of DETENAL -- of which they are justifiably proud -- continues to be one of total and complete availability and openness; that is, all the cartographic materials, from the raw data to the finished map, are open and available to any purchaser, Mexican or foreign, private, corporate, or educational.

To better serve the needs of American buyers, DETENAL has just secured a Post Office box on the American side of the border, and all American buyers are encouraged to send their inquiries and orders to that address which is:

DETENAL
P.O. Box 7577
Calexico, CA 92231

The first step for an interested buyer is to obtain from DETENAL the latest quarterly index map that shows availability of the various map series produced, and the extent of coverage of aerial photography (high and low altitude and satellite). This index map, sent free on request, will enable the buyer to prepare a precise order for the maps desired in the various series produced. Previous to the order, the buyer should also inquire about postage charges and possible U.S. Customs broker's fees, as these charges may vary depending on the place of destination.

The quarterly index map cannot show, of course, every single aerial photo negative held by DETENAL. For users requiring aerial photography material, it is suggested that, after consulting the index map (that gives a numerical regional code for aerial photographs), the user prepare a diagram showing exactly the area desired and stating his particular needs in terms of scale and other pertinent technical data. By return mail, DETENAL will furnish the user with a list of suitable aerial photography, and a price quotation.

Users requiring additional cartographic data (special surveys, leveling or triangulation data, computer data, etc.), or preliminary sheets for areas not yet covered by maps in the regular series, it is also suggested that they send a diagram showing exactly the area desired, and stating the type of data needed. By return mail DETENAL will furnish the user with a list of surveying data available, and a price quotation.
MEETINGS AND EXHIBITS

1 Map Workshop March 8 and 9, 1979 Colorado School of Mines, Golden, CO.

An intensive two-day workshop presenting basic information needed to organize and provide service for a map collection, with a minimum of time and effort.

Participants: Hartley K. Phinney, Head Librarian, Arthur Lakes Library, Colorado School of Mines

David Cobb, Map and Geography Librarian, Library, University of Illinois at Urbana-Champaign

Mary Larsgaard, Map Librarian, Arthur Lakes Library, Colorado School of Mines

Ray Hill, Lyle Kemper, T. O'Brien - USGS Denver

Alice Sharp, Librarian, Historical Society of Colorado

Presented by the Office of Continuing Education, Colorado School of Mines.

1 An Exhibition March 11, 1979 The Bancroft Library, UC Berkeley, CA

"Great Maps & Atlases of The Bancroft Library" will be on exhibit March 12 through June 9, 1979 (Monday through Friday 9 a.m. to 5 p.m.; Saturday 1 to 5 p.m.; Monday, March 26, closed; Monday, May 28, 1 to 5 p.m.)

The Friends of The Bancroft Library will hold a reception in honor of the occasion on Sunday, March 11, 1979, 3 to 5 p.m.

1 AUTO-CARTO IV November 4-8, 1979 Sheraton Inn, Reston, Virginia

"Cartography and Computing Applications in Health and Environment" is the theme of Auto-Carto IV.

The International Symposium on Computer-Assisted Cartography will be sponsored by the American Congress on Surveyine and Mapping and the American Society of Photogrammetry with the cooperation of the U.S. Public Health Service and the U.S. Defense Mapping Agency. The Symposium will be held at the Sheraton Inn and International Conference Center, November 4-8, 1979. This is the fourth of a series of conferences on automation in cartography initiated by ACSM. Professor Robert T. Aandeenbrug from the Department of Geography at the University of Kansas is the Conference Chairman.

The registration fee will be $80, which covers meeting attendance, transportation for pre-arranged tours of government agencies, two meals, a conference briefing package, and one copy of the Symposium Proceedings.

For further information: Professor R. T. Aandeenbrug, Conference Chairman, AUTO-CARTO IV, Department of Geography-Meteorology, The University of Kansas, Lawrence, Kansas 66045 (phone 913)(864-4276).
POLYESTER FILM ENCAPSULATION*

by

Peter Waters
Restoration Officer
Preservation Office
Library of Congress

Introduction

The Library of Congress's choice of polyester film for conservation use is the result of its being one of the most stable and inert of the many different kinds of films now available, and also the one least subject to variations in manufacture. The film is formed by the condensation of ethylene glycol and terephthalic acid. The most widely used type is a biaxially-oriented product which has been manufactured in such a way that its tensile properties are essentially equal in both the machine and transverse directions.

The manufacturing process consists of extruding and cooling the molten polymer and then reheating it to allow the film to be stretched. The film is then held in the stretched position while it crystallizes. The result is a strong, tough, dimensionally stable film, available in a range of thicknesses from 0.0005 to 0.0014-inches and in roll widths up to 120 inches.

The biggest users are the photographic industry, where its dimensional stability is extremely valuable, and the electrical industry, where high temperature stability is important.

Polyester film used for conservation purposes must be entirely free of plasticizers, U.V. inhibitors, colored dyes, impregnants and surface coatings, and meet Government specifications L-P 00679 and L-P 3779.

Since polyester film is a crystalline material, it will melt above the flash point of paper, which is 458°F. It cannot be fused together by conventional workshop heat sources. It can be fused satisfactorily by ultrasonic methods, but these would be prohibitively expensive for most users unless a very large scale operation is planned.

Deterioration of Polyester Film

Polyester film will deteriorate if exposed for a long period of time to strong alkaline solutions, such as concentrated ammonia, or to ultraviolet radiation, as under a desert sun for six months. It should hardly need to be pointed out, of course, that both types of exposure would destroy cellulose

* This paper was distributed and used by participants in a workshop at the University of California, Santa Cruz, Summer 1978, presented by Peter Waters and Donald Etherington of the Library of Congress, Office of the Assistant Director for Preservation, Administrative Department, Washington, D.C. 20540. It is a Working Draft, August 1977, Series 300, No. 5. It is published here by permission.
Permanence and Durability of Polyester Film

In testing procedures used by the Research and Testing Laboratory of the Library of Congress, samples of 3 mil., 4 mil., and 5 mil. polyester film were exposed to accelerated aging conditions of 90°C. + 50% R.H. and 100°C. + 0% R.H. for over 60 days, which may be interpreted as equivalent to several hundred years of natural aging. Examination of the aged samples showed little or no reduction in flexibility and brightness. M.I.T. folding endurance measurements for 3 mil. film after accelerated aging indicated an average reduction of folds from 60,000 to 25,000 folds, a substantially smaller change than that demonstrated by any known alkalized paper (e.g., Permalife) or cellulose acetate film. A fuller account of the test programs will be published at a later date. For the purpose of this document, it is sufficient to state that the use of polyester film would seem to offer greater and more permanent protection than cellulose acetate lamination.

Other Physical and Chemical Properties

All polyester films are accompanied by a certain degree of static charge, especially in the thinner films. When 3 mil., 4 mil. and 5 mil. thicknesses are used, the slight static attraction, combined with the advantages of the film’s impact-absorbing capacity and flexing property, makes it almost impossible to fracture even the most brittle paper encapsulated between two sheets of film sealed around the edges. In addition, the static helps to hold fragile documents together, thus reducing (although not eliminating) the need to repair small tears. Mending is usually necessary only in those cases when separated fragments to be encapsulated together, or when long tears are present.

For artifacts characterized by flaking design layers (inks, pastels, charcoal or other loosely-bounded media), polyester film must be considered inappropriate. In such cases the static within the film encapsulation could lift off particles of matter, later depositing them at random within the enclosure.

Sealing

The search for alternatives to ultrasonic sealing as a means of joining the edges of polyester film sheets was not as difficult as expected. Solvent-type adhesives strong enough to fuse the film were tried but found unsuitable because they require thickening (with one or more special monomers) in order to permit application in a clean, straight line. We then investigated many kinds of pressure-sensitive double-coated adhesive tapes. One of these, 3-M Scotch Brand Double-coated Tape #415, not only met our handling requirements but also proved remarkably stable throughout many varying conditions during accelerated aging studies.

This particular double-faced pressure sensitive tape consists of an acrylic resin coated onto both sides of 0.5 mil. polyester film. When used to seal polyester films together, it is not subject either to cold flow or to bleeding at high temperatures, up to and including the melting point of polyester film (approximately 520°F). If immersed in water, the adhesive does not
readily separate from the film. After exposure to accelerated aging conditions of 90°C. + 50% R.H. and 100°C. + 0% R.H. for over 60 days, the tape remained flexible and with much of the original adhesive tack. Some slight darkening of the adhesive was observed although this was less than anticipated.

Common sense dictates that the tape be applied no closer than 1/8" from encapsulated items. Test samples so constructed have shown no evidence of any migration between tape and encapsulated paper.

**WARNING:**

For archival conservation, neither this nor any other contact adhesive tape should be used directly on paper artifacts. Even though the adhesive is almost completely inert, relatively speaking, when used between layers of film, it can be expected to react adversely with some papers if in direct contact. A further word of caution should be offered regarding other pressure-sensitive adhesive tapes which might be considered suitable for sealing polyester film. No other tape should be used for this purpose unless it can be proved to have the same archival qualities as 3M #415, as demonstrated by the Research Office's testing procedures at the Library of Congress.

**Desirability of Deacidification Treatment of Items Prior to Encapsulation or Lamination**

One of the questions most frequently asked about polyester film encapsulation is whether or not deteriorated items are better preserved by being deacidified and alkalized prior to encapsulation. The simple answer is "yes, of course". If the item is to be retained in original format for an indefinite period of time (several hundred years), neutralizing existing acidity and building in an alkaline salt will prolong the life of almost all types of deteriorated papers, regardless of whether they are encapsulated, laminated, boxed or foldered. Artifacts which are designated for indefinite retention in their original formats should be deacidified and alkalized before full encapsulation wherever their owners have adequate facilities and experience to undertake a safe deacidification program. Where such facilities do not exist, items may be encapsulated without deacidification in order to take advantage of the physical protection the method offers, but it must always be remembered that chemical deterioration of the items will continue inside the encapsulation.

With regard to cellulose acetate lamination procedures, it has now been firmly established by many research studies that lamination without deacidification is disastrous for most papers, especially those of the 19th and 20th century. Degradation products released by the laminated document will so affect the laminating materials (which also deteriorate independently) as to cause embrittlement of the entire system.

- This can be illustrated by comparing laminated items which received prior deacidification to others which did not. The untreated items will show a substantial drop in fold endurance immediately after lamination, and this physical deterioration will continue at a rapid rate to a point at which the laminate is characterized by extreme brittleness. Those items which were deacidified effectively before lamination, on the other hand, will retain a reasonable
percentage of their original fold endurance and exhibit much slower physical deterioration of the laminates as they age.

The rate at which the process of deterioration takes place depends on a great number of factors, but for simplicity's sake it is sufficient to say that the more the paper has deteriorated before lamination, the faster it will deteriorate after lamination. The same principle applies to paper encapsulated in polyester film without prior deacidification, with one major difference between the two systems as they age: unlike laminating materials, polyester film is completely unaffected by degradation products in the paper or by its characteristic physical deterioration. Furthermore, since there is no adhesive contact between the film and paper, all physical stresses are taken up by the film and do not reach the paper. These are the prime reasons why the Library of Congress believes that the properties of polyester film are superior to those of the cellulose acetate/tissue combination and why the polyester film encapsulation is considered to offer a larger number of viable choices in methods of archival protection than any other material so far identified.

Effects of Encapsulation on Deterioration Rate of Contents

Another question is also frequently asked: "Will cellulosic material deteriorate at a faster rate if encapsulated than it would otherwise, regardless of whether or not it has been deacidified?" The answer to this question is far from simple, and unfortunately the research data on this point is not yet conclusive. During the studies which were conducted by the Research and Testing Office of the Library of Congress, it was found that some papers which started out with a high initial fold strength before aging tended after encapsulation and exposure to accelerated aging conditions (50% R.H. + 90°C. and 0% R.H. + 100°C.) to deteriorate at a slightly faster rate than those papers not encapsulated. Paper which had a low initial fold strength before aging showed very little difference when aged, and in one case (newsprint) a higher fold retention was observed in the encapsulated samples compared with those not encapsulated. These findings, however, can be somewhat misleading, because the main purpose of polyester film encapsulation or of cellulose acetate lamination is to provide extra strength to already fragile materials.

In the analysis of factors in deterioration, physical wear and tear transcend direct comparisons between materials given added protection and those without it. For example, suppose two items are in identical condition in every respect. One of these is encapsulated or laminated and made available for normal use, and the other is placed only in a Permalife folder and locked away in a vault, unused, for several hundred years. When this hypothetical stored sheet is then removed and tested, the unencapsulated, un laminated paper might retain a slightly higher folding endurance than the other, used paper when tested after removal of its protective layers. If, however, both the encapsulated and unencapsulated items are used as they are found, the chances are that the unencapsulated item would disintegrate rapidly, the laminated item would follow suit and the encapsulated item would be intact. Another way of looking at the archival properties of the polyester film system was demonstrated during our research when paper samples of zero folds were encapsulated and aged for a total of 60 days, while being tested at 12 day intervals for fold endurance. The test was weighted at 1½ kg. The film withstood between 30,000 to 60,000 folds before rupturing, and the paper inside withstood over 40 folds after the 60 day aging period.
This particular test was also set up to measure differences between deacidified and untreated 0-fold paper. The results were interesting. Brightness measurements made after 60 days' aging were similar, but the fold retention was greater in the untreated samples than the ones treated with methyl magnesium carbonate. This suggests that when paper becomes brittle, little to no measurable effect is gained by deacidification. The reason for a lesser fold endurance in the treated samples is considered to be the result of friction against the inside of the film from small particles of magnesium!

The reason for explaining this phenomenon in some depth is not to suggest that archival materials should not be deacidified but to point out that there seems to be a stage at which deacidification might be unnecessary and a waste of time if encapsulation is used. This is not true, however, of lamination. The lamination will last longer if the brittle paper is deacidified.

The Importance of Choice

It is questionable practice to add any type of extra physical support to structurally sound material except when it is expected to undergo heavy use or when it is a very rare and valuable and any direct handling is to be avoided. Adhesive coatings should not be applied directly to such material in either case. It is not uncommon to encounter substantial amounts of structurally sound manuscript and document material which has in fact been laminated, and quite common to observe workshops equipped and programmed to carry out virtually a single kind of restoration procedure, such as lamination. The danger of this approach is that an operation which relies on a machine and an operator to feed it will sooner or later subject sound materials to the laminator, thus helping to justify (improperly) the funding of the machine and its operator and please the administrators by increasing production. For example, there was a period some years ago at the Library of Congress during which any need for manuscript material which was slightly fragile would result in routine lamination of the manuscript (usually without deacidification) before it was handled by processors or cataloguers or served to the reader. Such practice has now been discontinued, in favor of the use of Permalife folders and/or one-sided-seal polyester film "folders". The Restoration Office now provides many thousands of such "folders" annually to the Manuscript and Music Divisions for protecting weakened material during reader use and for processing uncatalogued collections of material in sheet form. They are also widely used throughout the Library of Congress for temporary protection of brittle materials during microfilming.

Advantages and Disadvantages of Polyester Film

While polyester film has outstanding qualifications as a preservation material it is no panacea, and it is not without disadvantages: the film is glossy, it adds appreciably more weight to an item than lamination and the materials are more expensive than those used in lamination. The cost factor, however, is evened out by a reduction in preparation time for documents to be encapsulated, especially since less mending is required. Furthermore, the system of encapsulation can be carried out by relatively inexperienced personnel, a practical convenience as well as an economical one. When one adds to these facts the potential for immediate and total reversibility, polyester film's advantages certainly seem to outweigh its disadvantages.
As we increase our knowledge about all forms of treatment it is sound practice, from a long point of view, to seek out flexibility in current techniques and new alternative methods. Polyester film encapsulation is now sufficiently established to provide at least one alternative to existing forms of protection, and its uses can range from phased protection to more permanent, archival preservation. One of its greatest advantages over lamination is the absence of adhesives or impregnants between the film layers and the items they protect, thus avoiding direct physical and visual changes and undesirable chemical reactions, and allowing instant removal.

Simplicity and instant reversibility are ideals we all strive for, but making decisions on what material may be appropriate for a large scale encapsulation program still requires the experience of a conservator or the informed consideration of a librarian well versed in conservation literature.


One manufacturer of polyester film is DuPont, who markets its product under the name of Mylar. There are several distributors of smaller quantities of Mylar and polyester film, or DuPont sells direct to the customer if the purchase meets their quantity requirements (500 lbs. = about 10,000 sq. ft.).

The 3 M "Scotch" brand double-coated tape, #415, ¼" wide x 36 yards length, is available from most dealers who stock 3 M products (perhaps by special order if not in stock), or from 3 M Corp., St. Paul, Minnesota 55101 (perhaps for information on where to obtain this tape in your area).

In the following pages, as part of Peter Waters' paper above, are sketches of the technique of "Making a Polyester Envelope". Certain tools are shown in these sketches; as the result of my encapsulation program at UC Santa Cruz, I have acquired and used the following items:

- one-pound weights (up to four will provide enough for most applications, covered with felt or some other lint-free cloth)
- X-acto knife (No. 6-ST) with capacity to change to a variety of blades.
  (No. 2 Assortment of X-acto knife blades)(use for ¼" tape prying)
- window-squeegee (12" wide) or a squeegee used by artists for print making
  (the latter provides a more substantial rubber surface, and for my taste, a firmer grip handle)
- artist's brayer (1" wide) which I use for securing the ¼" tape in position.
- steel cutting edge (I have a four-inch, beveled on one edge, 60" long, which is the width of the roll of Mylar. If one buys shorter width rolls, select a cutting edge accordingly.)
- Stanley cutting knife with heavy razor type, single-edge blades in retractable case or with a protection device that snaps over the blade.

NOTE: To avoid buying large rolls, which have to be cut to size, consider buying pre-cut sheets of Mylar from a vendor. Select a few sizes, file maps that have been encapsulated in standardized sizes. LC's G&M Division has done this, and I'm cutting sizes to fit map. Experience shows me that I prefer pre-cut and filing in standardized sizes.
MAKING A POLYESTER ENVELOPE

Place polyester film on grid.

Position item on film parallel with grid lines leaving at least 1/8" between document and grid line.

Place tape at edge of grid line as shown at right.
MAKING A POLYESTER ENVELOPE (Cont'd)

Continue taping around item leaving a small gap where tapes meet at corners.

Turn item around and continue taping until all four sides have tape aligned correctly.

Full paper covering away from tape.
MAKING A POLYESTER ENVELOPE (Cont'd)

Place top covering of polyester film over item and exposed tape. Using a squeegee, seal that half of the envelope.

Remove remaining paper coverings of tape.

Seal envelope closed by using squeegee.
MAKING A POLYESTER ENVELOPE (Cont'd)

Trim envelope in board shears or with a knife and straight edge. Upon completion of trimming, round the corners.

Completed polyester envelope.
EXAMPLES OF FOUR POLYESTER ENCASEMENTS

Polyester Folder:
One-sided Seal

Polyester Folder:
Two-sided Seal

Polyester Envelope:
Four-sided Seal

Polyester Encasement:
Fore-edge Seal with Binding
Margin Punched for Post-binding
John Van Balen, compiler —


and


Chauncy D. Harris, in his Bibliography of Geography, Part I, Introduction to General Aids, (University of Chicago, Department of Geography, Research Paper No. 179, 1976), notes that "there are only two general bibliographies of reviews of books that include reviews in the principal geographical periodicals. The most comprehensive is the Internationale Bibliographie der Rezensionen wissenschaftlicher Literatur (IBR), which also has an English title: International bibliography of book reviews of scholarly literature. Although published in Germany, it is fully international and covers reviews in all the major journals as well as in other fields. The Book review index is limited to a relatively few journals in English."

Van Balen has filled the gap in the indexing of geographical literature with this Guide.

These indexes provide bibliographic coverage of works in the geographic, geologic, and earth sciences. Reviews of works are cited from more than 45 periodicals including: Association of American Geographers Annals; Canadian Geographer; Canadian Geographical Journal; Professional Geographer; Soviet Geographer; Die Erde; and many others. Many of the journals included are not indexed elsewhere. It avoids duplication by omitting the map librarianship cites.

Arrangement is by author, with subject, geographical, and title indexes. That is, the author of the original work being reviewed — not the author of the review. Therefore, if one is looking for reviews of The Atlas of Wisconsin (Madison, University of Wisconsin Press, 1974) edited by Arthur H. Robinson et al., one would look under the entry: Robinson, Arthur Howard; all the reviews of that work in all of the periodicals indexed would be found.

The single aspect that this reviewer finds distressing is the quality of the the photo-offset typography. The photo-reduction to two-thirds of the original type-size renders the result very difficult to read. It would help, if succeeding volumes are contemplated, if the compiler and publisher select a more uniform-impession typewriter and a more distinct type font.

Nevertheless, researchers and map librarians will find these two volumes invaluable. Critical selection of titles in these fields will be made easier by use of the Van Balen Guides.

Stanley D. Stevens
URBAN HISTORY IN FIRE INSURANCE MAPS:
Nevada as a Case Study
by
Eric N. Moody
Instructor
W5stern Nevada Community College
Carson City

The fire insurance maps that have been made of American cities and towns constitute a valuable source of primary information for historians. Ranging in size from single sheets to large atlases, they are useful not only to re- searchers in urban history, but also to those working on any subjects in which the development of, or within, urban areas plays a part.

The most important of these maps are the ones which were published between 1867 and 1961 by the Sanborn Map Company. This firm achieved a monopoly in its specialized field of map making by the early years of this century, and its name became virtually synonymous with the type of map it produced.

The Sanborn publications have not been used as extensively by historians as they could have been. Indeed, they are not as widely known as they should be in the historical community. While in many instances the Sanborn maps (which, with the notes printed on them, constituted the company's "reports" on communities) offer the best single source of information on a town or city—its physical development, its social, cultural, and even economic configuration, they have too often been overlooked or neglected by writers who might have profited from their use. As the maps, and the holdings of them in public institutions, become more widely known, it is hoped—and expected—that research in the documents will increase.

It is hoped, especially, that researchers in the field of frontier history will make greater use of the maps, for it is in that area, particularly that of the mining frontier, that the Sanborn maps attain some of their greatest importance.

In Nevada, as in other mining states, towns and even cities came and disappeared virtually overnight. A population of one-thousand in the spring of a year could dwindle to one-hundred by the fall, and most of the wood-frame and canvas structures of a mining camp could be, and many times were, moved on short notice from a failing district to a booming one.

All too often the heyday of a mining camp was brief and took place between the decennial U.S. censuses, when the names of inhabitants, the general location of their residences, their ages, and their occupations were recorded. Too often, also, a boom came and went before information gatherers for city directories even got into the area. Town plats, if they were drawn up, did not show individual structures or what use was made of them. Newspapers, if they existed in a camp, provided only an inconsistent and incomplete record of development.

Presented October 12, 1978, Fall Meeting, WAML, Reno.
Fire insurance maps are valuable when used in conjunction with census reports, directories, and other records; where census reports and city directories are lacking, the maps become invaluable for reconstructing the economic and cultural makeup of a town. Even photographs usually will not yield as much information on the uses of buildings and the materials of which they were constructed. Moreover, frontier photographers too often confined their picture taking to main streets, major industrial operations, or scenic views of open spaces - this last being something with which the Sanborn map makers didn't concern themselves. Back streets lined with shanties, tinshops, stables and corrals, "cheek to jowl" wine rooms and flophouses, Chinatowns, and redlight districts rarely were recorded on film.

The detail in the Sanborn reports, of which the maps are the principal part, can overwhelm a researcher who comes across them for the first time, especially if he has been spending hours perusing microfilmed newspapers and poorly printed directories trying to determine the exact location of the Blazing Stope Saloon on G Street, or find out what type of commercial enterprise was sandwiched between the Overland Hotel and Will's Carriage House.

To start with, there is specific data on each community's water supply and fire fighting capabilities. Gold Hill in 1877, for instance, had reasonable fire protection for its population, which was recorded as being eight thousand. There were two hand-fire engines with 1,200 feet of hose, and one independent hose company with 2,000 feet of carbolized hose. There was a volunteer fire department, and the fire department in neighboring Virginia City responded to alarms in Gold Hill.

Tonopah's fire fighting abilities, in April of 1905, were less impressive: "No organized company - 2 Stempel chemical engines - 1 hook and ladder truck". There was a water company in booming Tonopah, but it was refusing to give fire protection until the city was incorporated.

Still, Tonopah's fire protection was better than that enjoyed by many of Nevada's mining camps and other communities. Tuscarora, when it was still a producing camp in 1886 (with a population of 900) had: "No steam and no hand engines, no independent hose carts." The faded camp of Aurora was in the same predicament in 1890, as was the new camp of Columbia in 1905, when the latter boasted a population of two-hundred and fifty.

The Sanborn reports also took care in noting the water facilities of each community that was mapped, especially as these related to fire protection. The notation could be terse, as in the case of Tuscarora and Aurora ("Not good"), or quite extensive, as in the case of Eureka, which was reported to have a population of 4,500 in 1886:

4 reservoirs capacity 130,000 gal's at South end of Main St. Filled by mountain streams. Supply plugs thro' 6" main & 4" and 3" branches. Reservoirs give 92' pressure. Reserve reservoir cap. 50,000 gal's on hill, 1,500 feet west on Bateman St. supplies & connects with 6" main at cor. Main and Bateman Sts. is 200' above town & is specially reserved for fire purposes. A 200,000 gal. reservoir being constructed.

Water supply & fire plugs inadequate.
Of more general interest than the notes on fire fighting equipment and water supplies are, of course, the maps themselves. These show the buildings - structures - in the town (as well as underground cellars), their locations, their proximity to each other, and tell of what materials they were constructed.

The maps, when used with directories or newspapers, can be employed to pinpoint the locations of certain businesses, and even private residences - especially if unusual shapes, uncommon building materials, or other distinguishing features are involved.

One can see at a glance - as insurance agents did - the fire dangers of communities. The notes on water and fire protection headed the maps; below these can be seen the crowding that could cause a whole block to go up in flames if one structure in it caught fire. Also, the relative flammability of buildings can be discovered by noting what they were made of. The Sanborn maps, along with those of other fire insurance firms, used colors to indicate types of structures. Those marked in yellow were wood-frame; those in red - brick; in blue - stone; in grey - iron; in brown - adobe; and those in green were "specials" of combined or not readily categorizable materials. Cloth lined buildings were marked "CL", and relative heights of structures were noted. Stables were designated by cross-hatching. If stovepipes instead of chimneys were present in a building, these were marked. Windows (and what floor they were on) were indicated, as were fire walls, frame partitions, iron doors, shutters, and other miscellaneous features.

Virtually all of the Nevada mining camps, with their predominantly wood construction and lack of water, presented high fire risks, but some places were riskier than others. Comparing two camps, Aurora in 1890 and Columbia in 1905, we can easily see this. Both camps were approximately the same size. However, many of Aurora's larger structures in the middle of town were brick, while the commercial center of Columbia consisted almost entirely of frame structures, or structures that were part frame, with canvas sides and roofs.

There was more open space between buildings at Aurora, due, no doubt, to the depopulated camp. Regardless, buildings in downtown Aurora in 1890 were probably slightly more insurable than those in the middle of Columbia in 1905.

As valuable - and probably more intriguing - to historians than the information on building construction is the depiction of how buildings were utilized. We find that, as widely believed, every other business establishment on the main street of a Nevada mining camp tended to be a saloon or gambling hall. And we find, as widely suspected, that newspaper offices were usually located next door to saloons. Chinese laundries, which almost never made their way into city directories, did, indeed, dot the streets of mining camps.

There is a wealth of social and cultural information in the maps. The 1886 map of Tuscarora, for instance, delineates a Chinese section on Front St. Within it are wooden cabins, adobe stores, an adobe joss house, a brick store, and a washhouse constructed of adobe, stone and wood. A few more Chinese "shanties" are located over on Main St. The map of Eureka in the same year shows an extensive "Chinatown" on Monroe St.

Redlight districts are also shown on the maps of some communities. A quite
large district is indicated for Tonopah in 1905. Focusing on Corona Avenue, it spreads across the northern part of the city, west to Central, and south of Mizpah Avenue. Numerous buildings, large and small, are labeled with a euphemistic "female boarding", and some large dance halls and saloons are identified.

Reno, which grew up as a transportation center serving mining areas, had a redlight district that thrived from the 1860's until World War II, and that eventually became one of the largest legally sanctioned districts in the country. It is outlined on a number of Sanborn maps from the 1880's onward. That of 1904 shows the district extending for some two hundred feet along Front St. (now East First), over onto Center St., and two-hundred-and-fifty feet along both sides of the alley between, and parallel to, Center and Lake streets. Numerous buildings marked "Japanese Female Boarding" are found in "China Town", which lay at the eastern end of Front St. where it connected with Lake.

According to the 1904 map, more than thirty structures in the downtown area of Reno were used as brothels or "cribs". A number of the larger buildings in the district were apparently partitioned into individually occupied cribs.

Institutional holdings of Sanborn Maps

Judging from known holdings in public institutions, thirty-two Nevada communities were reported on by the Sanborn company, with maps or map corrections being made, between 1885 (or perhaps 1877) and 1959. Additional towns may have been the subjects of reports; so far there is no evidence of this, but other maps might eventually come to light.

The Sanborn coverage of Nevada is not all that could be hoped for. There are no maps for the 1860's when so many early mining camps flourished, or for Virginia City before it began its final decline in the late 1870's. Some of the maps depict mining centers during their boom years (Goldfield, Tonopah, Rhyolite and Ely would be among the camps so portrayed), while others detail camps which had already slid much of the way to "ghost town" status (Dayton, Austin, Aurora, and even Virginia City would be included in this category).

Still, even with the shortcomings in coverage, and even with some imperfections in the existing maps, the Sanborn reports are valuable tools for the historian of Nevada, as well as of other areas. Anyone attempting to describe the development of mining frontier towns, the social or economic life, or the cultural face of such communities, would do well to devote part of his research time to an examination of the maps prepared and issued by the Sanborn Map Company.

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Institutional holdings of Sanborn fire insurance maps of Nevada communities:

* Inclusive dates indicate year in which map was made and also those years during which corrections were added by the Sanborn company.

** Key to location symbols: CNoS - California State University, Northridge; CST - Stanford University; InJC - Geographic Operations Branch, U.S. Bureau of the Census, Jeffersonville, Indiana; LC - Library of Congress; NVHI - Nevada Historical Society; UU - University of Utah.
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<th>Community</th>
<th>Years*</th>
<th>No. of Sheets</th>
<th>Location**</th>
<th>Comments</th>
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<td>2 copies at NvHi; one has undated changes in pencil, noting addition &amp; removal of bldgs.</td>
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**Sources**

Library of Congress, Geography and Map Division.
"Fire Insurance Maps of Nevada: A Preliminary Checklist of Maps of Cities and Towns Published in Loose Sheet Form by the Sanborn Map Company." October 1974. (The entries in the preliminary checklist are included in a forthcoming checklist of all Sanborn map holdings in the Library of Congress.)


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**NEWS NOTES - Sanborn Maps**

Frances Woodward, WAML President, and Special Collections Librarian, University of British Columbia Library, has reviewed WAML's Occasional Papers Nos. 1, 2, and 3, the Rees-Hoeber Catalogue of Sanborn Atlases at California State University, Northridge, and Hoehn (Vol. 1) and Peterson-Hunt/Woodruff (Vol. 2) Union List of Sanborn Fire Insurance Maps Held by Institutions in the United States and Canada, in Urban History Review No. 2-78 (ISSN 0703-0428), (published by the History Division, National Museum of Man, National Museums of Canada, Ottawa, October 1978), pp. 113-115.

R. P. Baker, Archivist, Arkansas State Archives (Arkansas History Commission), Little Rock, Arkansas, writes to inform users of Volume I of the Union List that that institution is the holder of the following Sanborn maps:

- Little Rock, Pulaski County 1897 104 p.
- Hot Springs, Garland County 1915 microfilm
- Helena, Phillips County 1892-1926 microfilm

WAML is grateful to Mr. Baker for this contribution, and invites other users and readers to submit other additions or changes to the institutional holdings directly to the Editor of the WAML Information Bulletin.

(see the letter from the Bureau of the Census, Geography Division, p. 139)
FEB 06 1979

Mr. Stanley B. Stevens
Western Association of Map Libraries
% University Library
University of California
at Santa Cruz
Santa Cruz, California 95064

Dear Mr. Stevens:

We understand that the Union List of Sanborn Fire Insurance Maps is issued by your association. The list identifies the Census Bureau's Data Preparation Division in Jeffersonville, Indiana as an agency that has these maps available.

The Data Preparation Division has been receiving requests for copies of the Sanborn maps. The requests are routinely forwarded to the Bureau's Washington office for response.

These maps are on file with the Bureau for our own reference purposes only. We do not ordinarily distribute copies of commercial maps; furthermore, we cannot sell copies of these maps in any case, because they are copyrighted by the Sanborn Map Company. Persons requesting copies of the maps are referred to Sanborn and to the Library of Congress' Geography and Map Division, which has a working arrangement with Sanborn regarding distribution of the maps to noncommercial users. However, the Bureau is willing to make the maps available for examination at our Jeffersonville facility; arrangements must be made in advance by contacting Mr. Wendell McManus of the Data Preparation Division (812-288-3212).

Please include the above information in your next issue of the list. If you have any questions, please contact Mr. Donald Hirschfeld of my staff; his telephone number is 301-763-2668.

Sincerely,

[Signature]

Jacob Silver
Chief, Geography Division
Bureau of the Census
DEALERS’ CATALOGS RECEIVED

1 Jo Ann and Richard Casten, Antique maps, atlases and books:
   RR 2 Little Bay Road, Wading River, New York 11792

   Catalogue III [1978] 55 items, some illus. from - Munster's 1550 map
   of the World, to - Zatta's 1776 map of the Western Hemisphere. + books

1 Elizabeth F. Dunlap, Books and Maps, 6063 Westminster Place,
   St. Louis, Missouri 63112

   List No. 31-M [October 1978] Americana in Maps 275 items

1 Geologic Map Service/Telberg Book Corp., P.O. Box 920,
   Sag Harbor, New York 11963

   Catalog pages 220, 292-A, 308-A-D, 309, 310, 312, 313; each page of
   Telberg's Detailed Catalog. GeoLogic, tectonic, some topographic.

1 Michael Ginsberg Books, Box 402, Sharon, Mass. 02067

   Catalogue Seventeen: The American Heartland / Illinois, Indiana,
   Michigan, Ohio & Wisconsin. Many books include important maps.

1 The Jenkins Company, Box 2085, Austin, Texas 78768

   Catalogue 118: Recent Acquisitions: Americana and Literature.
   Includes item no. 1457: Charles Preuss' Topographical Map of the Road
   from Missouri to Oregon .... Washington, 1856. $500.

1 George S. MacManus Co., 1317 Irving Street, Philadelphia, PA 19107

   Catalogue 242: Rare Americana / American Revolution - Architecture,
   Arts & Crafts - Civil War & The South - General Americana - Indians &
   The West - Pennsylvania & Philadelphia - Ships & The Sea - Travel &
   Exploration.

1 rudolf muller international booksellers bv, p.o. box 9016,
   1006 AA amsterdam, holland

   Catalogue No. 8/78: Books on Cartography and related sciences/new and
   antiquarian titles/selected stocklist/maps and atlases. 146 items.

1 Neville's Medieval Maps Limited, Church Square, 48 High Street,
   Tring, Hertfordshire HP23 5AE, England

   A selection of Items from our stock. 33 items including a J. Blaeu
   atlas, being the 1662 edition of volume II of the Atlas Maior sive
   Cosmographia Blaviana, about $8,500. "Blaeu's America volume is seldom
   sold as an atlas .... the present example in fine condition with excellent
   colouring."

1 Kenneth M. Newman/The Old Print Shop, 150 Lexington Avenue at 30th
   Street, New York, N.Y. 10016

   Portfolio Vol. 38, No. 4 Map Issue. 39 items. illus.
P. J. Radford, Sheffield Park, Near Uckfield, Sussex, England

Catalogue No. 22: Americana

Antiquariat Stenderhoff, Alter Fischmarkt.21, 4400 Münster, Germany
Alte Stadteansichten und Landkarten bis 1800/Antiquariatskatalog 326, November 1978.

L. S. Straight, 101 Maple Street, Weehawken, New Jersey 07087

Catalogue No. 327: Americana
Catalogue No. 328: Miniature Maps and Views, 1685.

Weinreb & Douwma Ltd., 93 Great Russell Street, London WC1, England

Catalogue 20: Manuscript maps and charts. Compiled by Tony Campbell. 1978. French maps and charts; the Napoleonic administration of Italy; British maps and charts; other nationalities. illus.

Dawson Rare Books, 16 & 17 Pall Mall, London SW1Y 5NB, England

Antique Maps / Dawson (no date, unnumbered - 1979?)
"Dawson Rare Books present this catalogue representing a selection of our stock of antique maps. ...." World, Africa, Americas, Asia & the Far East, Australia, New Zealand & the Pacific, Europe, British Isles. 371 items. illus. color reproductions, 48pp.

DUPLICATE MAPS & ATLASES AVAILABLE

The Map and Airphoto Division of the University of Calgary Library (Calgary, Alberta, T2N 1N4) will soon have available for distribution quantities of duplicate and superseded Canadian NTS sheets and USGS topographic sheets, should anyone be interested in receiving any, please contact Robert Batchelder, Map Librarian, and include want lists if you have one available.

The NARL Library has two copies of the ENVIRONMENTAL ATLAS OF THE GREATER ANCHORAGE AREA BOROUGH to give away. Produced in 1972 by the Arctic Environmental Information & Data Center, University of Alaska, the atlas is 105 p. & is 45cm in height. Contents include introductory text, and maps & text on the following: regional setting, topography, climate, geology, water, floods, land reclamation, waste disposal, earth movements; volcanism, energy, air pollution, noise pollution, vegetation, fish & wildlife, and land development.

If any library wants a copy (post paid), please contact: Ann Lizbeth Langston Library
Naval Arctic Research Laboratory
Barrow, Alaska 99723
CARTOGRAPHY of EARLY NEVADA, 1820-1900*

by

Alvin R. McLane
Reno, Nevada

This presentation discusses maps and mapping of the area of present Nevada. Early cartographic myths of the Great Basin are pointed out, but a number of better known maps aren't presented. The presentation emphasizes the lesser known maps.

[Slides] 1 & 2: Archaeologists tell us that man has been in Nevada for 11,000 years. Do these petroglyphs represent maps of early hunting grounds? The oldest rock art in Nevada may date back 3,500 years.

3. North American map of 1826 taken from Lt. Warren's "Memoirs" of the Pacific R.R. Survey shows early cartographic myths. The most persistent legend was the San Buenaventura River. Spanish Franciscos Atanasio Dominguez and Silvestre Vélez de Escalante left Santa Fe during August 1776 and took four months exploring the Colorado Plateau and eastern Great Basin.

   Escalante kept an all important diary of the mission. Bernardo de Miera y Pacheco drew the maps, filling in blank spaces in a great terra incognito. As magnificent as his manuscript maps were, he made a few important mistakes. He made one lake out of Great Salt Lake and Lake Utah, calling them Lake Timpanogos. Miera connected the upper Green River to lower Sevier River, naming it the Rio San Buenaventura. The terminal pool he called Lake Miera (Sevier Lake). Being west of the Rocky Mountains (Sierra de las Grullas), Miera assumed that the lakes emptied into the Pacific Ocean. Imaginary Rio Timpanogos flowed on west, as did Rio San Buenaventura from Lake Miera.

   Miera's Rio San Buenaventura persisted as a legend when Alexander von Humboldt's English version of Political Essay on the Kingdom of New Spain appeared in 1811. In his large atlas "Carte Générale", Humboldt used Miera's geography, though Humboldt didn't explore in the northern portion of this map.

4. Jedediah Smith and his companions, Silas Gobel and Robert Evans, made a west-to-east crossing of the Great Basin during late spring 1827. The men nearly died from lack of water before making the mountain-man rendezvous at Bear Lake in present Utah. Smith's "tracks" wandered east, from south of Walker Lake, to Sacramento Pass in the Snake Range where they then left the state. Jedediah's "Great Sandy Plain" persisted on maps for decades. The slide shows the "Fremont-Gibbs-Smith Map" as called by Dale Morgan and Carl Wheat. The map has pen and pencil notations by George Gibbs on a Fremont base.

   Smith's contribution to American West cartography is nicely handled by Morgan and Wheat (see bibliography at end).

* Script to accompany slide show at Western Association of Map Libraries, Fall Meeting, October 11, 1978, Reno.
5. It took a foreigner, A. B. Brué, a French map maker, in 1834 to first show Smith's influence in the West.

6; 7; 8: Others showed Smith's knowledge, such as Burr's 1839 "Map of the United States", his 1840 "The North-West-Coast of North America ... ", and Charles Wilkes' 1841 "Map of Upper California".

9. Bonneville's 1837 "Map of the Territory West of the Rocky Mountains". The "Battle Lakes" (Humboldt Sink region) is a result of Walker's 1833 trip (chronicled by Zenas Leonard). On one version of this map that I have seen, is a notation "Killed 25 Indians". This number may be in error, as Leonard's "Narrative" relates that 39 were killed in a battle nearby.

10. John C. Fremont entered Nevada in 1843-1844 and later.

11. Part of "Map of the Exploring Expedition to the Rocky Mountains in the year 1842 and to Oregon and North California in the Years 1843-1844 ... ". Fremont's route entered present Nevada by way of Long Valley, then south through High Rock Canyon, Soldiers Meadows, and across Black Rock Desert to Pyramid Lake.

12. The expedition camped near The Pyramid. Maps and sketches were made by cartographer Charles Preuss.

13 & 14: Geodetic bearings and weather information were carefully recorded.

15. The Pinyon pine (Pinus monophylla) was collected and described from specimens collected in the Bodie Mountains (in Nevada), just east of Bridgeport, California.

16. Detail map of Fremont's crossing of the Sierra Nevada, near Carson Pass, south of Lake Tahoe. Fremont's report was published by Congress (Serial 467) in 1845 and was reprinted several times. Another useful chart, "Map Showing Country explored by John Charles Fremont", was issued with his "Memoirs" (Belford, Clarke and Company, 1887).

17. Portion of an United States map by Roig, published in Madrid with a title page date of 1852, but a map date of 1855 (in Atlas Historico Universal de Geografia). Note hastily added hand-colored territory boundaries.

18 & 19: The Pacific Railroad Survey during the 1850's produced several monumental maps. After Gunnison was killed in Utah, E. G. Beckwith led a survey party across Nevada. Besides the outstanding maps, F. W. Egloffstein executed sweeping lithographs of the country traversed. The slide is a view east of the Ruby Mountains. Valley Mountain is in the center. Goshute Mountains and Antelope Range stand out in the background. The smoke column indicates the location of the party's encampment.

The next picture views the Black Rock Desert from the Selenite Range. Gerlach would be located at the left edge of photo. Both slides include only the center 1/3 of the original sketches.
20. This shaded relief map of 1858 is from Joseph C. Ives' Colorado River of the West (Congress document, 1861). Ives navigated the Colorado from its mouth to the vicinity of Promontory Point, just above Hoover Dam. Egloffstein, again, was the artist.

21. In a little over a month, J. H. Simpson traversed the Great Basin in 1859, from Camp Floyd to Genoa, then in Utah Territory. His "Map of Wagon Routes ...", part of it shown in slide, is from Report of Explorations Across the Great Basin of Utah in 1859, published in 1876.

22. "Map of Proposed Humboldt Canal" is a local chart along a portion of Humboldt River, issued with the Humboldt Canal Company Prospectus of 1863. Interesting topographic features are: two "Franklin" ranges, one indicates Edna and Osgood Mountains and the other is Sonoma Range; "Mount Arago" is Winnemucca Mountain; and Garibaldi Range is now East Range. The Humboldt Canal was a desert dream of Joseph A. Ginaca.

23. This interesting three-state map of Nevada, Utah, and Arizona was made by J. H. Colton in 1864. However, the county boundaries are indicative of 1862. The Territory of Nevada was established March 2, 1861 and she was admitted to the Union as a state on October 31, 1864. In 1866, the Nevada Legislature moved to extend the eastern boundary to its present location, which was approved January 18, 1867. The last major boundary change was in 1919, when Pershing County was established from the southern half of Humboldt County.

24. George M. Wheeler, an Army Lieutenant, began geographical surveys in eastern Nevada during 1869. In 1872 his work became officially known as "Explorations and Surveys West of the One Hundredth Meridian". Wheeler's work took him over much of the southwest before completion in 1879. This slide is a portion of the 1871 sheet "Explorations and Surveys south of Central Pacific R.R.", by Louis Nell, "Chief Topographer and Draughtsman". This magnificent chart extends from Mountain City, Nevada, to Tucson, Arizona, and includes the Death Valley portion of California. Much detail by hachuring is shown along the routes of travel. A fair amount of emphasis was placed in delineating mining districts.

25; 26; 27: I have been a follower of Wheeler for sometime, and was delighted to learn that the University of Nevada, Special Collection Library, had notebooks of the Wheeler Survey. Here (slide 25) is the cover for "Astronomical Records" kept by Lt. Birnie in western Nevada. The next shot (26) is a page from the book of "Odometer Records", recorded while the party was in the region from Austin to Eureka. This picture (27) is from P. W. Hamel's 1871 "Computation Book", from Carlin to Camp Mojave. Hamel was killed this same year during an Apache attack of a stage near Wickenburg, Arizona.

28. The King Survey (U.S. Geological Exploration of the Fortieth Parallel) had its share of competent cartographers and artists. Clarence King commenced his work in Nevada during 1867, which extended to the Wasatch Mountains the following two years. This chart appeared in Serano Watson's "Botany", (Volume Five of the King Survey).

29. King named this pretty lake in the Ruby Mountains after his sister Marian. The lake is now called Overland. The chromolithograph is based on a photograph taken by eminent photographer Timothy O'Sullivan.
30. A common two-state map of Nevada and Utah by S. Augustus Mitchell, 1871. The map is hand colored. The county boundaries are those as determined for 1869.

31. Eureka County, on March 1, 1873, was established from the east half of Lander County. Could this stone monument be from that era? Marker is just south of Interstate 80, west of Dunphy.

32. Before the turn of the century, the U.S. Coast and Geodetic Survey ran a Transcontinental Triangulation system across the United States. High peaks across the center of Nevada served as prime stations such as Pah Rah Mountain, Mount Coma, Arc Dome (Toiyabe Dome), Mount Callaghan, and Troy Peak.

The Wheeler Peak (13,063') station was established in 1878 by A. F. Rodgers. Wheeler Peak was the center of the "Great Hexagon" and comprised an area of 20,730 square miles. Mt. Nebo, 150 miles away in Utah, was sighted from this station. This picture shows one of the 100-year old U.S. Coast and Geodetic Survey structures on the peak. Unfortunately, the ruins have recently been called "heliograph station". The Survey intermittently occupied these stations until 1900.

33. George A. Rice, of the Coast and Geodetic Survey, claimed that he was on the Wheeler Peak on "July 4th 1887-89". I haven't been able to find information on Mr. Rice.

34. This is George F. Cram's 1891 Nevada map from his Universal Atlas of the World. This is a strange assemblage of county boundaries, probably not legally described. Many map makers of this period thought that Nevada looked better with its southern tip cut off and moved aside.

35. The Four Great Western Surveys headed by Clarence King, Ferdinand V. Hayden, John Wesley Powell, and George M. Wheeler, ended by 1879. Thereafter, topographic mapping has been ably conducted by the U.S. Geological Survey. This Reno sheet appeared in 1893.

36. This crowded 1899 map of Nevada (and California), with place names quite accurately located, is taken from Fireman's Fund Insurance Company's New Concise Atlas of the World. By 1900, Nevada was quite well known and major geographic features were placed on maps. True, mineral deposits were later discovered, but the blank spaces, so to speak, were by now filled in.

[NOTE: The maps in this slide presentation were copied from my collection and those held by the Nevada Historical Society in Reno.]

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A Select Bibliography of Recent Publications
Describing Maps of the Nevada Region

Auerbach, Herbert S., "Father Escalante's journal 1776-77 newly translated with related documents and original maps". Utah Historical Quarterly, Vol. 11, Nos. 1, 2, 3, 4. 1944. 142p.

Excellent for the reproduction of several early maps of the Great Basin and Southwest.

Excellent discussion of Smith wandering the Great Basin and Far West.


Only work relating specifically to Nevada.


Expanded to the following:


A monumental compilation which took 25 years to complete. Hundreds of maps cited. Actually, maps listed are through 1884.

###
THE OBSOLETE TOPOGRAPHIC MAP AS A RESEARCH DOCUMENT*

by

Earl W. Kersten
Professor of Geography
Geology-Geography Dept.
University of Nevada-Reno

A long sub-title for this talk is: Maps are our friends, but old topographic sheets can be very special friends!

In the latter part of the nineteenth century, as we all know, the U.S. Geological Survey began its national topographic mapping program. The maps have always been multi-purpose maps, indispensable to many government workers, scientists and engineers, but also useful to many others, including the general public. A few years after publication, however, their value begins to decline as the culture, in particular, but also physical features, undergo change. The city grows, or the river is dammed.

But these maps have not lost their value for some purposes. An outdated topographic sheet provides a relatively accurate record of physical and cultural features insofar as these were mapped, at a particular time. It has a value similar to that possessed by a letter, diary, or newspaper of the time. The researcher interested in that time and place can gain from such a map invaluable information, which is sometimes not available from other sources.

I would like to illustrate how valuable such maps can be with some slides of older Nevada and California quadrangles.

1. San Francisco, California, 1:62,500, surveyed in 1892-94, with culture revised in 1914, shows the Bay area before bridges and when railroad and ferry transportation were supreme. The orientation of the East Bay communities to the Southern Pacific Railroad is more clearly revealed than on modern maps. Long piers project into the Bay at the port of Oakland, probably to shorten the cross-Bay haul by ship or ferry. Hydrologic change is evident too, for modern maps show most tidal marshes filled in and offshore islands like Mission Rock connected to the land. We can see the Panama-Pacific Exposition grounds, part of which continues in public use today as the Presidio, Maritime Museum, Fort Mason, and Marina Park.

2. San Mateo, California, same scale and date, informs us that South San Francisco was already the site of industrial development, as shown by its railroad yards and large buildings. The importance at the turn of the century of interurban and short-line railroads is illustrated by the interurban line extending south along El Camino Real and the Ocean View line along the coast. Tracing the routes of the long-gone lines, we would be likely to find other features that developed in connection with them, such as the rights-of-way, or, perhaps, roads following the former rail paths and old stations, now converted to other uses.

* Presented October 12, 1978, Fall Meeting, WAML, Reno.
3. **Salt Lake, Utah, 1:250,000, edition of 1885.** This map was based on the early King and Powell surveys. The topography is greatly subdued by mapping at the rather high contour interval of 250 feet. Curiously, town layouts are shown only schematically. We wonder why this very old map was reissued as late as 1930, when 1:62,500 maps were being actively produced in many areas of the United States.

   Southern and south central Nevada, as it was before and just after the turn of the century, is featured in the next few slides:

4. **St. Thomas, Nevada-Arizona, 1:250,000, edition of 1886, is similar to the Salt Lake sheet.** Located accurately are such features as the "Old California Trail - Miller's Cutoff" (known to most of us as the Old Spanish Trail), the towns of Saint Joseph, Old Overton, Overton, and Old Calville.

5. **Camp Mohave, Nevada-California is a similar early map showing us the original dimensions of the Black Canyon of the Colorado River, now partly filled by Lake Mohave which was created by Davis Dam.**

6. **Ivanpah, California-Nevada, 1:250,000, published in 1912, is a more detailed map than the last three.** Running north through it and onto the:

7. **Las Vegas, Nevada-California map of the same scale and date, is the recently completed San Pedro, Los Angeles, and Salt Lake Railroad, which was responsible for the founding of Las Vegas.** We can also find Las Vegas Ranch, earliest settlement in this area, and such features as the sawmills in the Spring Mountains, which produced some of the lumber used to build the town. Another railroad leads northward and westward toward Tonopah.

8. The next slide shows the west central part of the same map.

9. **Furnace Creek, California-Nevada, 1:250,000, published in 1910, shows the area northwest of Las Vegas, including a large part of Death Valley as well as the lately discovered mining camps of Rhyolite and Bullfrog.**

   Farther north in west central Nevada, in two views, is the:

10-11. **Hawthorne, Nevada-California quadrangle, mapped at 1:250,000, showing the country around and south of Hawthorne as it appeared shortly after the turn of the century.** The railroad is the somewhat peculiar Carson and Colorado (purchased and renamed by the Southern Pacific by this time) which really went nowhere special. It was built in the early 1880's when most of the mining camps in this region had closed. It got only as far as Owens Valley. A railroad connects Bodie with the timbered area south of Mono Lake, but when this map was reissued decades later the railroad had disappeared. It was erased by the map makers.

   Moving to the Sierra Nevada west of Reno, we learn about a way that place names can undergo change. Soda Springs, California, is a landmark on U.S. 40 west of Donner Summit, shown on the:
12. Donner Pass, California Quadrangle (1955) but on the:

13. Truckee, California map of 1889, it is called Soda Springs Station, and Soda Springs itself is a settlement six miles to the south.

At the east base of the Central Sierra, human activities in building a dam are shown by comparing the:

14. Bridgeport, California-Nevada quadrangle of 1909, with:


Aspects of the 19th century geography of the Walker River region, about 100 miles south of Reno, are depicted by the:

16. Wellington and Wabuska quadrangles, mapped at 1:125,000.

To travel between Mason and Smith valleys one followed steep, rocky roads over Mickey, Mason, and Hudson passes. But shortly after 1900, there was a copper boom and the Nevada Copper Belt Railroad was built through narrow Wilson Canyon, which has an easier grade. The railroad is now gone, but the state highway now follows the Wilson Canyon route opened by the copper entrepreneurs. A rough idea of the extent and amount of settlement at this time can be obtained from a study of these maps.

The rise and fall of the town of Wadsworth is partly documented by the maps. In 1890 the town, as illustrated by these two views of the old:

17-18. Wadsworth sheet, was important as a division point on the Central Pacific Railroad and a cross-roads for travel in four directions, but it lost this status when the division point became Sparks, and it has gradually been eclipsed by Fernley as shown on the newer:


Last, we present a few samples of special maps made by the Geological Survey to depict some of the mining towns of the early part of the century:

20. The Yerington District 1:24,000;

21. The Fly District 1:30,000; and,

22. Rochester 1:24,000.

Through these examples, we see that though on becoming dated these maps lose a usefulness based on their portrayal of the current scene, they gain a new kind of value in providing relatively accurate glimpses of the past. This argues strongly for strenuous efforts to preserve them and to encourage their use by those who can benefit from them.
Introduction

Recently there has been an increase in interest and awareness of the importance of visual resource management and consideration of our visual landscape in planning and development. As more use is made of our land and water resources we find a deterioration in the visual resource and subsequent loss in our quality of life as a result of this deterioration.

In response to this need, several agencies have put together computer programs that enable resource managers to obtain some idea of visual impacts prior to making management decisions. This paper deals with one such program called "Viewit". Viewit does a scene area analysis for single or multiple observer points, and produces output in the form of tables and/or maps. Specifically, Viewit provides the following information for the user:

1. Develops tables and maps for thirty-six $10^\circ$ slope aspect classes or eight $45^\circ$ slope aspect classes. Aspect simply refers to the direction in which slope lies for each cell in an area.

2. Develops tables and maps for slope percentage classes. That is, it determines percent slope for each cell within the area by using the statistical method of least squares.

3. Verifies accuracy of topographic data through a data check program that compares the elevation of a cell with its neighbors. If the elevation varies by a user specified amount, that cell will be pointed out as potentially incorrect and can be checked.

4. Expresses in tables and maps the area that can be seen from any single point by an observer or number of observers.

5. Develops a profile map of the study area for any specified length indicating the elevation of each cell along the profile.

The user can specify such things as height of the observer, location of observers, vertical angles of view, horizontal angles of view, effective radius of view, and weighting factors relative to foreground, middleground and background scenes. Elevational data from a topographic map is the only input required by Viewit to operate.

* Presented at the Fall Meeting of the Western Association of Map Libraries, Reno, Nevada, October 12, 1978.
Use of Viewit

before using a program of this nature one must consider several things. Perhaps there are cheaper ways to accomplish the same goals with less time and effort. If a small area is to be analyzed a man in the field for an hour or so may get the job accomplished in a more expeditious manner. Another consideration is that output from a program of this type is often not acceptable to the general public, and may not be viewed as valued information in the decision-making process. The visual resources must be significant enough to warrant the use of such a program. In many cases the areas under consideration will contain little or no visual resource of any importance. These and other considerations must be assessed prior to utilizing such a program.

The advantages of Viewit are many. The source of data is readily available from any topographic map. The commands for the program are few, easily understood, and changed quickly. Large areas, 50-100 miles, can be analyzed in a matter of seconds once the data have been compiled. A permanent record of slope classes, aspects, observer positions, profile, and scene areas is available for use at a later date. For large, distant areas, expensive travel and field time are cut to a bare minimum.

Once a decision is made to use Viewit, topographic data can be generated from several sources. Data can be inputed from cards or tape. If data input is to be made from IBM cards, elevations can be taken directly from 7½-minute (1:24,000), 15-minute (1:62,500), or 1:250,000 maps, depending on the precision the user is trying to obtain. Data can also be supplied to Viewit via a digitized terrain tape. National Cartographic Information Center (NCIC) tapes can be used for this purpose as well as Defense Mapping Agency tapes. These tapes are available for all of the continental United States and parts of Alaska. Seven tapes contain all the elevational data for the entire State of Nevada.

To code elevational data, one simply superimposes a grid over the study area and selects the contour line elevation that most nearly represents a particular cell. Cell size is determined by the precision one is required to obtain. A large cell size will yield less precision while a smaller size will yield greater accuracy but will require more time for coding. On digital tapes one provides the latitude and longitude of one corner of the area and indicates the number of rows and columns to be considered.

A computer run can then be generated using the topographic data for a study area, and stipulating the types of information desired. The output can be generated to scale and superimposed over a 7½-minute quadrangle or similar base map. Several examples of the output are shown in Figures 1 through 7.

Applications

Viewit is versatile enough to provide useful data for land use planners, foresters, recreation specialists, and engineers alike. It can provide a tool useful for making land management decisions other than scene analysis. For example, it can be used to determine tractor loggable areas where the percent slope must be below 35. By analyzing a slope map and accompanying table, a forester can determine at a glance where these areas are located and how much land is in each slope category. This saves valuable field time.
The program can be used to locate fire towers by simply placing an observer position atop those areas under consideration and noting what can be seen. At the same time, the output would enable one to determine what areas were not visible from a particular tower. By changing a single input parameter the user can build a fire tower 25, 50, or even 100 feet high and note the increase in observed areas. Accompanying tables will indicate how many cells are seen and how much land is involved. Recreation specialists have used Viewit to determine the potential of areas for ski development by looking at slope classes available for different skill levels of skiers. Recently, the U.S. Forest Service has been criticized because of the location of unsightly clearcut areas. Viewit provides an opportunity to locate clearcut blocks in such a way as to prevent them from being seen from roads, trails, and scenic vistas. The same visual impact analysis can be done for a new highway proposal, bridge construction, a proposed building in downtown Reno, or an electronic relay.

In Nevada, the program is utilized in several diverse ways. The Bureau of Land Management is selecting key viewing points along highways and trails and noting the visual impact of new power line construction prior to granting building permits. With Viewit, several power line routes can be checked before deciding on a final proposal. Tower locations can be determined so as to provide minimal visual impact. Additionally, the Bureau is currently attempting to develop criteria for evaluating wilderness potential in Nevada. The Forest Service has recently completed their own inventory of wilderness under the Roadless Area Review and Evaluation mandate. In conjunction with these studies, Viewit is being assessed as a tool for pointing out areas of visual solitude and remoteness. The program is also being considered for use by the Nevada Air National Guard in their low level night radar training missions. The observer in Viewit simply takes the place of the radar in the nose of the airplane and allows the air crew to determine what the radar will see prior to the mission. In this case, the observer is raised to an altitude above the ground that represents aircraft altitude. It is hoped that target acquisition will thus be enhanced. Finally, Viewit will be utilized in an attempt to ascertain the amount of snowmelt, and subsequent runoff, from a given watershed. In this case, the observer position is the sun which is elevated to several million miles above the ground. We hope to ascertain where it shines and for how long on any given day, and thus determine the amount of runoff that can be expected under cloudfree conditions.

Summary

Viewit is but one program that is presently available that allows scene analysis work to be done. A Forest Service program called "Preview" allows the user to see the results of a management decision prior to actual implementation of that decision. For example, the program will allow one to see an area with trees removed or with a new highway constructed in its actual setting. In this way, a potential impact can be seen before an actual cut is made or construction takes place. Various alternatives can be tried in an effort to discover the one that affects the visual setting the least.

The versatility built into these programs allows the user maximum flexibility. One is limited only by his ability to think up new uses for them. Viewit and similar computer graphic tools allow us the luxury of making mistakes without suffering the consequences. With these tools we can utilize our time and manpower in a much more efficient manner than was previously possible.
2 OBSERVERS

MAP

TIMES SEEN

FIGURE 2
Title Example
Profile Map and

USER REQUEST VIEW

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**Figure 5**

Slope Map and Slope Class Table

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Figure 6

Aspect class map

User requested table
NEW MAPPING OF WESTERN NORTH AMERICA

Contributions by:  
RB = Robert Batchelder, University of Calgary, Calgary  
MB = Mary Blakeley, University of Arizona, Tucson  
AC = Anna Chiong, University of Washington, Seattle  
LC = Larry Cruse, University of California, San Diego  
ML = Mary Larsgaard, Colorado School of Mines, Golden

THE WEST

ML United Airlines  
Ski the West: Colorado, Utah, New Mexico, Wyoming, California, Idaho, Nevada. (a free, full-color, 88-page booklet describing 23 ski areas, rates, etc.)

and

- for $1.50 you can also get the 22" x 34" map/painting by Hal Shelton, which is an oblique, high altitude view of the ski country.

United Airlines, P.O. Box 27, Glenview, Illinois 60025.

LC U.S. Geological Survey. Topographic Division. 345 Middlefield Road, Menlo Park, CA 94025

Land Use Data and Analysis (LUDA) maps on open file at NCIC-Western.
On 105mm microfiche, reduced to 24X, a set of 63 LUDA maps have been released for use, evaluation, and comment by users and librarians.

Only maps compiled in the Western Region are available in microfiche format, quads in the states of Arizona, California, Idaho, Nevada, Oregon, and Washington, are included in the initial distribution. The LUDA set will expand as more maps in the series are compiled.

Each fiche contains a reduction of an explanatory text, with a planimetric base map and four thematic maps displaying land use, political units, hydrologic units, and census county subdivision for a particular area.

Copies of the fiche may be purchased at $0.50 each, from: NCIC-Western, USGS - Mail Stop 31, 345 Middlefield Road, Menlo Park, CA 94025.

[see LUDA Inventory list, p.163-4- ]
ALBERTA

RB Canada Centre for Remote Sensing/National Airphoto Library
Mosaics for Alberta:
A new series of LANDSAT mosaics is being produced by CCRS/NAPL
which consists of colour mosaics in band 8 covering Provinces in
sections. Quebec and Alberta have already been done, British Columbia
is being done, and coverage will be expanded as each Province requests.
A listing of the mosaics available for Alberta follows:

EMG 1607 Alberta
1609 Kootenay River NTS 82
1609 Athabasca River NTS 83
1610 Hay River NTS 84
1611 Southern Alberta
1612 Central Alberta
1613 Northern Alberta

Contact prints cost $3.50 each (for 9x9" print) and enlargements
are available and are costed by standard National Airphoto Library
price list.

Available from National Airphoto Library, 615 Booth St; Ottawa K1A 0E9

ARIZONA

Environmental Geology Series folio:
"Environmental Geology of the McDowell Mountains Area, Maricopa
County, Arizona"

Study conducted by personnel at Arizona State University under the
supervision of Dr. Troy L. Pewe in cooperation with the City of Scotts-
dale. Publication is being assisted by the City and Arizona State
University Graduate College.

The folio series consists of ten geologic and derivative maps. This
series is being prepared as nine separate envelopes, the first two
containing two maps - (1) geology, and (2) land forms. The subse-
quent eight envelopes contain: (3) land slopes, (4) caliche, (5)
ground water, (6) geologic hazards, (7) material resources, (8) exca-
vation conditions, (9) waste disposal, and (10) construction conditions.

The map series scale is 1:24,000 and the area covered includes parts of
the following 7.5 minute quads: Curry's Corner, McDowell Peak, Sawik
Mountain, and Paradise Valley. All maps will be in color, accompanied
by explanation and text, as well as photos, charts, line drawings,
and other pertinent data on the verso.

Individually for $1.25, except envelope #1 = $2.50 which will not be
split (2 maps); when the entire set is available (Summer, 1979), it
will be sold for $10.00. (Mail add 25¢ post & handling) Prepay.
Foreign orders = US currency + 20% additional for surface mail.

Bureau of Geology and Mineral Technology, ATTN: Publications, 845 N.
Park Ave., Tucson, Arizona 85719.
WASHINGTON

AC  Washington, University. Department of Geography.

The University of Washington Campus and Vicinity, wheelchair routes and building access. Map compiled, designed, and drafted in cooperation between Physical Plant and the Department of Geography, August 1978.

col. map, 33 x 40 cm. on sheet 36 x 49 cm. Index to "Buildings, Departments, Offices, and Points of Interest; Wheelchair Routes and Building Access" on verso. Scale ca. 1:5,400

"Additional copies of this map are available from Central Stores. Contact the University of Washington Office of Publications for information concerning the production of this map or the Department of Geography for information concerning its contents."

KEY TO MAP SYMBOLS

- Recommended Wheelchair Routes
  - [green] Manually operated
  - [red] Power operated
  - [green] Curb Cut manually operated
  - [red] Curb Cut power operated

- Wheelchair Access To Buildings
  - [green] All floors
  - [red] Single floor only
  - [no symbol] No access

- Building
- Park/Sidewalk
- Road
- Campus parking area
- Public parking area
- Bus route
- Bus stop

SCALE

Map compiled, designed, and drafted in cooperation between Physical Plant and the Department of Geography, August 1978.
### NCIC LUDA INVENTORY
**FEBRUARY 1979**

**B = planimetric base**
**1 = land use and land cover**
**2 = political units**
**3 = census county subdivisions**
**4 = hydrologic units**

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(NEWS NOTES - (a collection of interesting items)

U.S.G.S. Open-File Reports Available from GPO

Charles Seavey, Documents and Maps Librarian, University of Northern Iowa, Cedar Falls, supplies the following information:

U.S. Geological Survey Open-File Reports are now available from the Government Printing Office (GPO) on a depository basis. GPO depository librarians can receive Open-File Reports by activating item # 624-H.

GPO states: "No specific information can be supplied as to the type, number, or size of publications."

The way the system is currently structured it is an all-or-nothing situation as far as the areas received goes. However, GPO is quite responsive to suggestions from depositories. If enough documents librarians request that the item number be divided on a state-by-state basis by writing:

J. D. Livsey, Director
Library and Statutory Distribution Service (SL)
Government Printing Office
Washington, D.C. 20401

there is a good chance that it will happen. In this way libraries will receive Open-File Reports for only the states that they select, rather than everything GPO publishes. ###
Mireille Pastoureau, reporting in Nouvelles du Livre Ancien (ISSN 0335-752X) #6, Ete 1978 (published by Centre national du Livre ancien, Bibliothèque Nationale, Paris), notes that the Department of Maps and Plans of the Bibliothèque Nationale undertook a new project last year. The following translation of the report has been provided by Kay O'Brien, University Library, University of California at Santa Cruz, for which The Editor (and I am sure many of our readers will be thankful) extends thanks.

Following a grant from the commission of research of the Ministry of Universities, the Department of Maps and Plans of the Bibliothèque nationale is making a study of the atlases published in France in the 16th and 17th centuries. The purpose of the enterprise is to analyze these atlases and their various editions, to locate as many as possible, and to classify them. The classification and description of the maps will be completed by the index of authors, engravers, editors, and place names. This index will permit the identification of many maps which were originally bound undated and unidentified.

This work will also include an historic study of the publication of French atlases and biographical notes on the cartographers. French cartographic publications of the 17th century were concentrated in Paris, with the exception of certain naval maps published at L'Herbe. Therefore, this information will be taken chiefly from the Minutier Central des archives Nationales. All information pertaining to atlases published in the provinces will be welcome.

This project, begun March 1, 1978, must be completed within three years. It is entrusted to a curator of the Department of Maps aided by three temporary employees. Their method is to first make a list of atlases with the help of catalogs and bibliographies, then to examine atlases kept in the principal Parisian libraries (Bibliothèque nationale, Bibliothèque Mazarine, Bibliothèque Sainte-Geneviève, Bibliothèque du Service historique de la Marine, etc.) They will then endeavor to identify atlases in other French libraries and collections which may have been overlooked, with the collaboration of colleagues of the provinces. The latter endeavor promises to be profitable because certain provincial collections are very rich in ancient geographic works in their original state. In Paris, on the contrary, and especially at the Bibliothèque nationale, atlases have often been removed from their binding in order to classify their maps according to a geographic order and the insertion of new sheets at the time of their appearance.

AMERICAN GEOGRAPHICAL SOCIETY Culminating nearly four years of investigation, negotiation, and legal proceedings, a justice of the New York State Supreme Court signed an order on July 26, 1978 enabling the American Geographical Society and the University of Wisconsin System to put into effect a 1976 contract to transfer the American Geographical Society library and map collection and Current Geographical Publications to The University of Wisconsin-Milwaukee. That historic move was completed during August and September. The AGS Collection is now housed in The University of Wisconsin-Milwaukee Library and Current Geographical Publications is now being published by the Library.

Dr. Roman Dzaniowsky, AGS Collection Curator and CGP editor, has invited requests for further information addressed to him or William Roselle, UWM Library Director, at: The American Geographical Society Collection of The University of Wisconsin-Milwaukee Library, P.O. Box 399, Milwaukee, Wisconsin 53201.
MAP DISPLAY AIDED BY NEW SCOTCH TAPE

Mary Larsgaard has submitted the following alternative to tacks. "3-M has come out with a double sided adhesive tape, one side a "permanent" adhesive (i.e., one year), the other side with what is called "encapsulated" adhesive, which will hold an item for an unspecified period of time, then, when you pull it off, it lets go, leaving no adhesive on the item. Well, I immediately thought, what an excellent item for map display, put a strip about two feet long on my display board, put up a map a day ago, peeled map off today--no sign of adhesive on back--stuck it back on (encap. adhesive good for 400 pull-offs). Better than tacks!"

Here is the product information (June 1978) from 3M, Industrial Specialties Division, 3M Center, Saint Paul, MN 55101:

"Scotch Brand High-Tack/Low-Tack Double Coated Film Tape Y-9415.
Description: A film tape coated on one side with a high-tack (permanent) pressure sensitive adhesive and on the other side with a low-tack (removable) pressure sensitive adhesive.
Physical Characteristics: Tape Thickness (w/o liner): 0.003 inches (0.08 mm)
A. Non-linered Side: 30 oz./inch width (33N/100 mm) adhesion to steel. B. Linered Side: 4-5 oz./inch width (4-5N/100 mm) adhesion to paper* *Test is 90° peel adhesion from common bond paper.
Values presented are averages and are not intended for specification purposes.
Technical Information: This low-tack adhesive allows removal of many papers, foils, and films without adhesive residue and will not cause delamination of most paper stocks. In many cases, the tape can be reusable for up to one year. Up to 450 removal cycles have been achieved with some smooth papers. Specific tests should be performed to verify satisfactory performance.
These adhesives will not bleed into most paper stocks thus minimizing possible discoloration or staining.
Flexible materials will adhere better to the low-tack adhesive than will rigid materials (e.g. paper vs. cardboard). It may also be necessary to remove curl from certain materials to avoid having them pull away from the low-tack adhesive over a period of time.
These adhesives have excellent aging properties in the sense that they do not degrade on aging when sandwiched between two substrates in normal use. The strength of any adhesive bond is dependent upon the amount of adhesive-to-surface contact. Firm application pressure develops better adhesive contact and thus improves bond strength.
Shelf life of tape is one year from date of receipt by customer when stored at optimum conditions of 70°F. (21°C.) and 50 percent relative humidity."

NOTE: No endorsement of this product is expressed or implied, the information is presented for information only. The Editor.

J. B. Post, Free Library of Philadelphia, kindly submits a clipping from the Inquirer of January 6, 1979, that notes the purchase of Charles Sessler, Inc., a 95-year old rare book store in Philadelphia, by W. Graham Arader III, a WAML Associate Member and rare map dealer. According to the article, the purchase price was $200,000. The Sessler name will be retained, and it will continue to deal in rare maps, prints and books, and that Arader will augment the store's stock with his own collection of over 50,000 rare maps.
CONSERVATION - PH INDICATORS  Herb Fox, Map Librarian, California State University at Fresno, supplies the following information for those interested in conservation measures:

A company by the name of TALAS markets a number of devices for the determination of PH balance in paper. They may be used to indicate the need for de-acidification of rare or expensive maps or to test the safety of map folders. These devices include:

The Archivist Pen: Felt-tipped pens containing brom cresol green indicator. Range is limited to PH 3.5 - 5.2. $6.00

Full-range set: A set of four pencils to be used with distilled water. Colorchart included. $15.00

Indicator strips: Impregnated strips of paper to be moistened with distilled water and pressed against moistened sample paper. Color matching charts are furnished. Box of 100 strips, $3.55.

Prices shown are subject to change. For further information write to:

TALAS, 104 Fifth Avenue, New York, NY 10011

WIU MAP DIRECTIONS, 1978, Number 1: GUIDE TO WIU MAP COLLECTIONS

The newest newsletter to reach us is that of the Western Illinois University, Macomb, Illinois 61455. Map Librarian/Geography Professor John Bergen is responsible for this first edition, a description of the Map Library and its services.

MAP NEWS MONTHLY, University of Arizona, Map Collection, November 1978 (Vol. 10, Number 3), and October 1978 (Vol. 10, Number 2), provide two very special issues compiled by Joanne M. Perry, Map Reference Librarian:

October 1978: (an index to) INSET MAPS: THE CARIBBEAN

November 1978: (an index to) INSET MAPS: THE PACIFIC OCEAN

These subjects are the focus of the issues; also included are New Acquisitions and citations to pertinent literature.

MAPNEWS is the title of a new feature by Charles A. Seavey, Documents and Maps Librarian, University of Northern Iowa, Cedar Falls, Iowa 50613, which appears regularly in documents to the people (Government Documents Round Table, American Library Association) (Volume 6, No. 6, November 1978--).

The first column presented a brief history of mapping by the federal government.

This outreach to ALA and documents librarians is sorely needed, and Charles Seavey is commended for his effort. Judging from the comments made to The Editor, two non-map librarians have brought it to my attention, Seavey's objective has been partially met.
NEW COVER DESIGN

For seven years, Volumes 3 thru 9, the Information Bulletin carried a cover created by amateurs (a person claiming to be an artist, and myself, The Editor, definitely neither an artist nor a typographer). The beautiful woodblock of Atlas, so representative of our profession — oriented with the Western Hemisphere facing the viewer, has become a logotype associated with our Association. It was, I should acknowledge, borrowed from the frontispiece of LeGear's A List of Geographical Atlases in the Library of Congress; its origin is unknown to me, but I'm pleased that it has become WAML's logo. No one, it seemed, liked the cover design altogether; certainly The Editor didn't.

After many suggestions for change from many Members and friends, Margaret Sowers, friend and Member, offered a concrete proposal: why not put the responsibility for design in the hands of a professional? She suggested the able hands of Sherwood Grover, the proprietor of The Grace Hoper Press (Aptos, California), and a Friend of the UCSC Library.

The design and selection of proper balance, the type font, and enough volume numbers and dates for a long-run, are Mr. Grover's.

We hope that you are as pleased as the Editor is; it is obviously an improvement.

PUBLICATION WINS AWARD


The book was reviewed by Roy V. Boswell in the November 1977 WAML Information Bulletin

Nautical Charts on Vellum was designed by Donna Carter, edited by Evelyn Sinclair, and produced by Harvey Satenstein, all in the Library's Publishing Office.

TONGE CREDITED WITH ASSISTANCE ON NEW POLITICAL MAP OF THE WORLD

Karyl Tonge, Map Librarian at Stanford University, has been credited with valuable technical assistance by Emeritus Prof. Ronald Hilton of Stanford. Hilton has produced a new map showing all the countries which belong to 16 of the principal blocs, ranging from the Afro-Asian People's Solidarity Organization — to — the Western European Union.

The map appears in the current issue of World Affairs Report, which Hilton edits. The map will be updated periodically. Individual issues of the report are available at $2.50 each, from the Editorial Office at 764 Santa Ynez, Stanford, California 94305.
Robert Batchelder, Map Librarian, University of Calgary, has kindly provided some useful acquisitions information on how to obtain publications and maps issued by the U.S. Central Intelligence Agency: (those available to public)

To obtain individual publications or tailored services, contact:

National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161 (telephone: NTIS Order Desk: ac703 557-4650)

- Catalogue available
- Cost (as of November 1978) varies with size and number of pages

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- Subscription and Deposit Account service offered
- May use American Express, check or money order
- Rush handling available

To subscribe to all CIA publications:

Document Expediting Project (DOCEX)
Exchange and Gifts Division
Library of Congress
Washington, D.C. 20540 (telephone: ac202 426-5650)

- Annual fee is $225 for subscription service

Also, check your local library: CIA publications are distributed to Federal Depository Libraries.

Careful readers of the article by Carlos Hagen in this issue, "The New Mapping of Mexico", will note that "as of 1 January 1979, DETENAL raised the price of maps to 100 pesos each, ...". Larry Cruse, UC San Diego, also brings this matter to our attention, and notes the $4.50 (depending on current exchange rate) is for all orders placed with DETENAL after that date.


"... None of the maps in the Clark Library have been cataloged." (285 maps)
"We have talked about cataloging the map collection, but nothing has been done so far. If you have any suggestions about how to undertake this project with no money and no staff, we would appreciate hearing them."

Does any reader have a suggestion?
REMOTE SENSING OF THE RENEWABLE NATURAL RESOURCES:
Data Sources, Storage, Retrieval and Interpretation.

by

Paul T. Tueller
Professor of Range Ecology
Renewable Natural Resources Division
College of Agriculture
University of Nevada-Reno

We use our senses - smell, taste, touch, sight, and hearing - to observe and explore the environment in which we live. This is accomplished through our neurophysical responses to the gases, liquids, and solids with which we have contact. Sight and hearing in particular allow us to sense distant features because of the patterns of energy that they emit. Remote sensing is most often defined as the acquisition of information about our environment without placing the data gathering device or sensor in contact with the object or phenomenon under investigation. Whereas our sight is probably the most advanced sensor, it yet only receives information from a limited visual portion of the energy within the electromagnetic spectrum. Over the years, our relatively limited capabilities have been extended by the invention and steady improvement of a variety of specialized instruments.

One of the problems has been a proliferation of great quantities of data quite beyond the capabilities of scientists, managers, and administrators to cope with. Only a small fraction of the remotely sensed data has ever been fully utilized. In part, the reasons have been lack of understanding as to the information content, and secondly, the sensing devices provide data at such a prodigious rate that we simply have not gotten around to completing the task, nor, are we likely to do in the immediate future. Also, as time goes on, many of the information systems and much of the early data has become obsolete and will never be used.

In order to consider this entire matter, it will first be necessary to define the renewable natural resources, and secondly, to briefly describe the "state of the art" of remote sensing technology. This will be followed by a consideration of the kinds of data and information coming from the array of remote sensors, and finally, some expressions of how it all ought to be handled for easy retrieval, use, and interpretation.

When we speak of renewable natural resources, we are basically referring to those products on the earth that lend themselves to the concept of sustained yield. Mapping and concurrent inventory of land and water features is the first and obvious application of remotely sensed data. Then, it follows that monitoring of natural resource management functions is the second important

* Presented at the Fall Meeting of the Western Association of Map Libraries, October 12, 1978, Reno.
donsideration. Seasons come and go, plant communities change, forests and
crops are harvested, wetlands are drained, lowlands are flooded, devastating
fires occur, urbanization continues, and land uses change. We remotely inves-
tigate croplands, forests, rangelands, wildlife habitat, water, and outdoor
recreation resources.

Remote sensing techniques constitute an important cost-effective supple-
mentary tool for resource managers. What are the techniques? If we consider
the electromagnetic spectrum and the various sensors available, we can conceive
of a classification as follows:

1. Ultraviolet Systems
2. Visible Systems:
   Multispectral scanners
   Return Beam Vidicon (Television Camera)
   Cameras
3. Infra-red Systems:
   Multispectral scanners
   Cameras (near infra-red)
   Thermal infra-red line scanning
4. Microwave Systems:
   Passive - Radiometry
   Active - Radar (imaging and non-imaging)
5. Telemetry Systems (long wavelengths):
   Radio receivers
   Return beam vidicon (Television; real time)
6. Laser

Heretofore, aerial photographic systems have been the principal source
of remotely sensed data concerning the renewable natural resources. In the
United States, the remote sensing of renewable natural resources probably had
its beginning in 1862 during the Civil War, when at Richmond, Virginia the
Unionist army used photographs to delineate pinewoods, swamps and river.
In 1888, Deville, in the course of terrestrial photogrammetrical mapping in
the Rocky Mountains also recorded vegetation. Forest inventories were ob-
tained from approximately 1:20,000-scale panchromatic vertical aerial photo-
graphs in the early 1930's, although it was not until the late 1930's that the
technique began to be utilized by range resource and wildlife habitat special-
ists.

In recent years, much of this "resource" photography has been acquired at
a scale of 1:15,840 (four inches to the mile). This scale has been widely used
in the United States by foresters, soil scientists and range managers. Unfor-
tunately, by the time the relatively new field of remote sensing emerged in the
early 1960's, resource managers had still not fully exploited the capabilities
of these photographs. Now, the use of color photography has become widespread
and line scanning in visible and thermal parts of the spectrum, radiometry,
rader, telemetry, and other techniques are being developed for use in renewable
natural resources.

As a basic series of strategies in the remote sensing of renewable natural
resources, we work within three frameworks, used either alone or concurrently.
First, we work with what we call multiscale or spatial analysis. This is often
referred to as multistage sampling. The basic strategy is to look at large
land areas on very small-scale imagery (1:100,000 or larger; Heller, 1970) for
initial mapping and inventory. Then, as more detailed information is required,
we look at selected sites with larger and larger scale imagery until the scale
and resolution required for detailed analysis is reached. This strategy re-
quires careful site stratification and clever sampling, usually with PPS
(probability proportional to sample size), so that the data from the largest
scales can be extrapolated to the larger land areas, plant communities, forest
types delineated on the smaller-scale images, and a sampling advantage obtained.

Second, we obtain multiband or multispectral data via various kinds of
remote sensors. This is to capitalize on the fact that data sensed in differ-
ent wavelengths of the electromagnetic spectrum can provide differing kinds
and amounts of information.

A third basic strategy is multistate or temporal analysis of landscapes.
Here we are referring to the obtaining of data over a site on an hourly, daily,
weekly, monthly, or annual basis. Or perhaps the need is only every three or
four years, such as following range trend (plant succession). These last two
strategies, of course, tend to rapidly accelerate the rate with which data has
been gathered. In order to process this data to create information for use in
management, the need for storage, easy retrieval, and rapid review and analysis
becomes apparent.

In view of the many forms of remote sensors, it naturally follows that
there are many forms of data or data products to be catalogued, stored, retriev-
ed, and used. Those that might be listed include:

1. Video tapes for storage of return beam vidicon data
2. Computer compatible tapes - for storage of digital data
   from space or aircraft born multispectral scanners
3. Audio tapes - telemetry information
4. Images - either first order retrievable-film aerial photo-
   graphs, or images generated from digital multispectral
   black-and-white or enhanced scene images.
5. Microfilm - reduced imagery

Perhaps the most obvious place to begin this discussion of data form and
handling is with the images. It is possible to categorize these as follows:

1. Panchromatic Black-and-White Prints
2. Color Prints
3. Color Infra-red Prints
4. Black-and-White Negatives
5. Color Negatives
6. Color Infra-red Negatives
7. Black-and-White Infra-red Prints
8. Black-and-White Infra-red Negatives
10. Color Positive Transparencies
11. Color Infra-red Positive Transparencies
These are the basic aerial photographic products. To complicate their storage, it must be pointed out that these can occur at numerous representative fraction scales usually from between 1:100 to 1:5,000,000, and of even greater importance to the film librarian is the fact that they are supplied in various formats. The most common are nine-inch contact prints, negatives, and positive transparencies. Also, small-format aerial photography is of great utility to resource managers in the 2\(\frac{1}{4}\)" x 2\(\frac{1}{4}\)" (70mm) format, where once again all three forms may be used—prints, negatives, and positive transparencies. Occasionally, photographic data is also found in a five-inch format, and prints are often found blown up into large display products, maps, or ortho-photos. Remember than the remote sensing community uses the term "photographic data" to refer to the general and exclusive information in the photograph, but yet to be extracted.

The storage of all these kinds of products presents to the map librarian a need to be at his or her ingenious best. How do we catalogue and then physically store photographic data? Another complicating factor is the fact that some photographic data is best left in the roll, while other film products come as single scenes. When contiguous scenes, adjacent in a continuous strip-roll, form stereo pairs it is significantly important to retain this integrity. Also, it is easy to quickly find a transparency by rolling a large roll across a light table, stopping at the appropriate place, and then view two adjacent frames as stereo pairs.

According to Morain (1976), university education in remote sensing is ill-defined and ill-equipped. He points out many needs, but the greatest is probably an available supply of inexpensive teaching aids and student "hands-on" materials, such as low-cost sample imagery, color enhancements, and color composites. Since many institutions of higher learning now have one or more courses in remote sensing and/or photogrammetry, the demand there can only increase.

Map and photo librarians might well consider for patron use the acquisition of light tables, suitable for roll film, and stereoscopes. The need is already there, but the provision of such services is sadly lacking. Along with the image libraries, there should also be current bibliographies on remote sensing.

In addition to stereoscopes, there is also a need when possible to provide other more complicated and powerful machines for working with images. As an example, I would like to mention the possible acquisition of multi-spectral color additive viewers, and image density slicing machines. In the first instance, we are talking about a machine that can view each of several black-and-white band images simultaneously. They also generally have the capability of easy registration and the possibility of adding color to one or more bands to produce various false color images, including simulations of color and color infra-red photography. Of course, deluxe models might have the capability of copying the product that is developed by the skill of the operator. The color density slicing machine allows the operator to view a black-and-white positive transparency with a high resolution vidicon camera, display the various densities on a television monitor, and then add color to each density slice. Once again, deluxe versions allow simultaneous viewing of more than one band and other capabilities. Unfortunately, the "deluxe" versions run into many mega-bucks, making them out of reach for most of us or our institutions.
Now let's turn to the problem of storing and using digital data. It is being predicted that digital data bases will be the maps of the future. Some day it is conceivable that we will not even have maps in storage because they may become obsolete rather easily. Instead, we will have a data base concerned with planimetric features stored on tape and updated periodically. Then, a client wishing an updated map will simply purchase the necessary computer and plotter time and have a new updated map prepared for immediate use, with the possibility that a new map can be generated the next day or the next week or year if that becomes an important factor. Various data bases will be used to overlap planimetric information of almost any conceivable kind.

Libraries of the future may be, in part, digital image processing facilities, or at the very least, have close liaison with such a facility within the same parent institution. An ideal setup would be an "on site" minicomputer including software. This would include rapid magnetic tape drives, control terminals, line printer, plotter, and interactive color CRT display with interface. The approach would be to have available a highly interactive system that could be easily used by the library user. In this way, various remote sensing data-sets could be stored on tapes within the library, and easily put to use with the data either printed or plotted (planimetrically) for the user to take from the library (for a fee) and use at his or her discretion.

At some future date, laser technology and higher data packing techniques will be used. For example, optical memories are extremely attractive for the storage of images, because up to 1,000 times greater data packing densities are possible than with magnetic recording. Such data can be stored in a way that corresponds directly to the two-dimensional spatial configuration of a picture. Also, microphotography and microfiche techniques offer reduction rates for film storage in excess of 40:1.

It is also probable that future libraries will provide the opportunity for the user to routinely analyze digital data. Such analyses would likely consist of spatial, spectral, and temporal pattern recognition procedures. The user might work with feature vectors, decision boundaries, skeletonizing procedures, edge and color enhancements, histograms, theme analysis, noise abatement procedures (electronic), density slicing, image smoothing and logarithmic filtering - all designed to aid the map or image user in his problems of scene enhancement and interpretation.

Renewable natural resources scientists would find a library with some of the characteristics I have described to be extremely valuable.

LITERATURE CITED


Deville, E. Photographic Surveying. Ottawa, Government Printer, 1895.
MAPS AVAILABLE : MAPS WANTED

The Map Library of California State University, Fresno, has a considerable number of duplicate and superseded maps (1) which it wishes to give away or trade for maps on its own list of desiderata (2).

The former (1) include:

- Certain California geologic sheets
- Topo sheets for Latin American areas
- U.S. Army maps, series V502, V795, & V895
- U.S. Bureau of the Census, GE50 maps
- California topos, both recent and O.P., in 7.5, 15, & 30 minute series
- U.S.G.S. series C, OQ, GP, HA, I, MF, MR, & OC.

The latter (2) include:

- Out-of-print California topos in the 7.5, 15, 30 and 60 minute series; also some special sheets.
- Certain numbers in the USGS series: Bulletins, Circulars, Professional papers, and Water-supply papers.

For complete lists of the giveaways and the desiderata write to:

Herb Fox, Map Librarian
The Library
California State University, Fresno
Fresno, CA 93740
Cartographic materials are important tools for the purpose of research, planning, and resource development. The need for maps is closely linked to a country's economic development. Cost-benefit analyses have shown the value of maps for developing and maintaining the economic level of a country. Mapping takes on a new meaning in relation to predictions concerning the shortage of resources, the supply of food, and the protection of the environment in the future. Population increase and urbanization also requires current large-scale mapping for planning and development purposes. The latest United Nations report on the status of world mapping states that "Asia has only 25% of its land mass covered by topographic mapping". The Philippines by contrast is fortunate to have complete topographic coverage at 1:50,000 scale. However, mapping must be kept current if it is to be most useful for economic development. Maps which are not continuously or periodically revised, rapidly lose their value. The type of significant maps needed for economic development are generally classed as: 1) topographic, 2) land ownership, 3) land use, 4) transportation, 5) communication, 6) other services, 7) statistical, 8) thematic, and 9) city plans. Therefore, it is essential that a cartographic collection be developed to meet the economic needs of a country.

The development of a cartographic collection depends upon establishing a

EDITOR'S NOTE: Donald A. Wise, of Arlington, VA; an Associate Member of WAML, on July 5, 1978 in Manila, The Philippines, participated in a lecture series, "The Value of Maps to Scholarly Research", sponsored jointly by the Ramon Magsaysay Award Foundation, The Asia Foundation, The Philippine Library Association, and the Association of Special Libraries of the Philippines. He presented this paper before approximately 75 Philippine librarians. He was also given the honor of officially opening the new map collection of the Asian Library of the Ramon Magsaysay Award Foundation in Manila.

The opening remarks of the program were given by the Honorable Jose D. Drilon, Jr., Vice-Chairman of the Foundation. The Honorable Waldo Perfecto, Assemblyman Metro Manila, addressed the group on "Coping with the Research Requirements of Development: the role of Libraries, Librarians, and Research Tools". Other speakers were Commodore Antonio Ventura, Director of the Bureau of Coast and Geodetic Survey and President, Philippine National Cartographic Association, on "Philippine Cartography"; Miss Marina Dayrit, University Librarian, University of the Philippines, and Mrs. Narcisa Munasque, Director, De La Salle University Libraries, on "An Assessment of the Adequacy of Research Tools in Public and Private Libraries". The closing remarks were by Honorable Frisco F. San Juan, Trustee of the Foundation. The Trustees hosted Mr. Wise to a luncheon and consulted with him on the acquisition needs and development of a cartographic collection for the Asian Library.

Mr. Wise also addressed about 150 Philippine librarians in the Philippine National Library auditorium, sponsored as a Special Convocation by the Philippine Library Association and the Association of Special Libraries. A tour of four types of libraries was arranged; Mr. Wise will present his assessment of Philippine map collections at the SLA meeting in Honolulu in June 1979.
procurement policy. These types of questions should be addressed while planning such a policy for the acquisition of maps: What type of cartographic collection is desired? Will a specialized collection of thematic maps and atlases be sufficient? Are large-scale topographic maps needed for the collection? Should a collection include aerial and space imagery? Are current city plans and transportation maps needed? Will the collection consist of only locally published cartographic materials? Are foreign maps required for the collection? How specialized or comprehensive should the cartographic collection be? Are adequate resources and administrative support available to acquire cartographic materials? How about storage and maintenance facilities? What about preservation and security needs? Is the staff experienced and large enough to provide the services needed to maintain and use the collection? Will the collection be classified and cataloged? What type of system will best suit your particular needs? What type of reference systems will be required? Will it be only a research facility or will loan services be available? These are a few questions which need to be addressed before a procurement policy is developed and a cartographic collection is acquired.

Many map libraries have written collection policies which set criteria for scope and depth of coverage, selection, evaluation, and weeding of the cartographic holdings. In order to maintain an effective cartographic collection, additional guidelines may have to be established. Uniform guidelines may be set for the collection to consider types of materials to be included, depth of coverage, and subject scope. The cartographic acquisition policy should include the following goals:

1) A statement of objectives indicating the purposes of the acquisition policy.
2) Selection criteria for determining the scope and how specialized or comprehensive a collection will be.
3) The optimum size and trend of the cartographic collection.
4) Responsibilities for recommending cartographic materials, and procedures to follow.
5) Procurement priorities such as determining the needs of the institution, types, scales, the number of individual cartographic items to be acquired, current or retrospective materials, and language shown on the map or atlas.
6) Periodic inventory and evaluation of the strengths and weaknesses of the existing cartographic collection related to the current needs of the institution.
7) Establish and maintain a desiderata list of cartographic items wanted.
8) Procedures for updating and weeding the cartographic collection.
9) Information on the subject scope of the cartographic collection and how it relates to the needs of the institution and the research users.

Once a cartographic acquisition policy is established, then a checklist of criteria for the procurement of new cartographic materials is a useful guide:

1) What are the strengths and weaknesses of the existing cartographic collections in subject matter, area of coverage, various map scales, and currency of materials?
2) Is this map or atlas a significant item for reference and research purposes and institutional needs?

3) What is the date of publication for the map or atlas? The most recent publication date is usually wanted for the collections. Sometimes older material may be of current value to the cartographic collections.

4) What is the cost of the item? Some cartographic materials are quite expensive and may require careful consideration to determine if the item should be acquired.

5) Does the cartographic item duplicate materials already in the collections?

6) What is the language of the publication? Cartographic items in English, Filipino, Spanish, and other major foreign languages may be purchased in preference to those in minor languages.

7) Is the subject matter of current or future importance to the cartographic collection?

After a procurement policy is defined, cartographic materials can be acquired through any number of sources. There are three basic methods used for the procurement of cartographic materials: by gift, by exchange of materials, and by purchase. Procurement by gift or donation is the preferred method used by most map libraries. This may be initiated by a personal visit, or contact by telephone or telegraph, or by using a letter to request the cartographic materials. A letter may be a useful solicitation tool when properly composed to make the most appropriate appeal for the occasion. If a large number of contacts are expected to be made by a letter of solicitation, then a simple form letter can be used. It is helpful to enclose a self-addressed stamped envelope when making a request. For institutional map libraries, often a mapping agency or commercial map firm can be encouraged to automatically deposit a copy of their respective cartographic materials in the collection.

Many national library collections can benefit because of a legal deposit requirement. Through this means copies of all cartographic materials produced or published in a country are deposited by law or decree in single or multiple copies in specified libraries. This permits a national cartographic collection to acquire copies of all currently printed materials in a country, and to become a research center for its local publications. The Philippines has such a decree on legal and cultural deposits which was approved on October 18, 1975, by Presidential Decree Number 812.

Any duplicate or surplus cartographic materials can be used as exchange items. These materials can be used to acquire additional cartographic items wanted for the collection. Libraries can offer to trade or negotiate an equivalent value of the materials in arranging for an exchange with other libraries, collectors, dealers, or individuals.

Purchase is another method for acquiring cartographic materials. This method is used when items cannot be acquired through either gift or exchange. Many libraries have limited funds for procurement purposes, so the acquisition of cartographic materials through gift or by exchange is usually more popular with map librarians.
Cartographic materials may be purchased directly from the publisher, distribution agency, or through a dealer who specializes in this type of service. Dealers usually charge a service fee for their assistance. The advantage of using a dealer is determined by the quality of service rendered, specialization in cartographic services, map coverage by countries, and centralized billing. There are several outstanding dealers who specialize in cartographic acquisitions. Three examples are: 1) Geo Center located in Germany; 2) Edward Stanford in London, England; and 3) Geologic Map Service in Sag Harbor, New York. These dealers issue subscription catalogs with supplements listing the foreign cartographic coverage by geographic area, scale, and subject content. Items listed include atlases, map sheets, and related cartographic materials. Some set map indexes, indicating coverage are included.

Sources of cartographic materials to be acquired are varied. It is essential to identify the potential sources for cartographic procurement. For current cartographic acquisitions, it is necessary to work with the sales catalogs and price lists of commercial, institutional, and governmental publishers, and with sources that are meant primarily for selection such as reviews and lists in cartographic, historical, and library science periodicals, accession lists from map libraries, the sales catalogs of antiquarian dealers in maps and atlases, and special subject or area bibliographies of maps and atlases. Cartographic materials are listed in or-as supplements to many national bibliographies, but the major international work is the comprehensive listing of the Bibliographic Cartographique Internationale. One disadvantage is that maps and atlases are slow to appear in this bibliography as well as in the national bibliographies. The International Geographical Union (IGU) publishes a world directory of geography entitled Orbis Geographicus which lists map sources and producers. The United Nations annual publication World Cartography and its Regional Cartographic Conference Proceedings are useful sources too. The United States Geological Survey has published a Worldwide Directory of National Earth-Science Agencies which is a most useful listing of governmental earth-science organizations and map producers. Cartinform, a supplement to Cartactual, is a current listing of maps, atlases, and cartographic publications. It is issued bimonthly in Budapest and is a most useful source for leads to cartographic items. The Map Collector is a new quarterly cartographic acquisition and reference tool. It specializes in retrospective materials and information on historical or out-of-print cartographic materials.

I have identified some cartographic sources for current maps and atlases for East Asia and the Pacific area. These are mostly American and European dealers who specialize in stocking and selling maps and atlases for this area. In Australia, there are two commercial firms: Gregory's Guides & Maps and H.E.C. Robinson; in France, the Institut Geographique National; in Germany, Herman Haack and Karl Wenckow; in Switzerland, Kummerly-Frey; in the United Kingdom, there is John Bartholomew and George Philip; and in the United States of America, American Geographical Society, American Map Company, Denoyer-Geppert, National Geographic Society, and Rand McNally. There are many other local sources for foreign map coverage, but I have tried to indicate a few major cartographic publishers.

International agencies can also provide useful cartographic items, and I have identified some of these sources for you also. Some examples are the Food and Agriculture Organization (FAO) in Italy, the International Civil Aviation Organization (ICAO) in Canada, UNIPUB in New York, the UNESCO Press in Paris, and the World Bank in Washington, D.C.
One of the outstanding contributions toward compiling a universal and comprehensive reference tool has been made jointly by Edward Stanford, Ltd. and Bowker Publishing Company. They published International Maps and Atlases in Print in 1977. This book attempts to list all maps and atlases known to be on sale and therefore available to the general public or to map collections and libraries.

The Library of Congress Geography and Map Division initiated a program in 1968 to catalog current accessions of single-sheet maps. This program was first known as the Machine-readable cataloging (MARC) II Map System. It is now know as MARC MAP. As of July 1, 1978, the MARC MAP record included over 52,000 titles. MARC MAP is fully compatible with LC monographic cataloging. Maps are classified according to the Library's Classification Class G, and the resulting descriptions are entered into the Library's computerized bibliographic record. The Library of Congress Cataloging Distribution Service provides a monthly subscription service for MARC tapes and printed catalog cards. Printed catalog cards are automatically generated from the tapes through the Library's videocomp program. Approximately 400 titles per month are currently provided in the MARC MAP subscription program.

Cartographic literature has to be scanned for leads to maps and atlases. Some useful sources are the American Congress on Surveying and Mapping quarterly Bulletin which has sections on maps and distinctive recent maps. Special Libraries Association's Geography and Map Division publishes a quarterly Bulletin which contains sections on new atlases and maps. The Cartographic Journal has articles about maps and atlases, reviews, notes, and a listing of recent maps and atlases. American Geographical Society's Current Geographical Publications is issued ten times a year. It is the most comprehensive current geographic bibliography published in English. Section three contains a listing of maps and atlases. Geo Abstracts: G - Remote Sensing and Cartography is published bimonthly and has current abstracts on maps and atlases. The Globe published in Australia is a source for maps and atlases. Western Association of Map Libraries Information Bulletin includes articles and listings of atlases, maps, and cartographic publications. Monaco's monthly International Hydrographic Bulletin has a listing of new charts and new editions. United Nations' annual International Map of the World on the Millionth Scale includes map indexes and alphabetical lists of published IMW sheets. Map, a journal of the Japan Cartographers Association, contains articles on cartography, notes, and sometimes a map is attached. The articles are written in Japanese, but the table of contents is bilingual in Kanji and English. The British Royal Geographical Society's New Geographical Literature and Maps includes a section on new atlases and maps. These are just a few examples of cartographic sources which a library should have available and use for acquisition leads.

Cartographic collections need both originals and facsimiles. A facsimile or reprint is less expensive than the original map or atlas and usually easier to procure. Facsimiles not only help to complement and to preserve original atlases and maps from additional use, but can fill a gap in the collections. This is particularly true if an original item is not available due to its rarity, or its high value on the current market. A growing number of firms, organizations, and individuals are offering facsimile versions for sale.

Photographic reproductions of certain maps and atlases with significant research and reference value can also be procured to enrich a collection. For example, there are unique manuscript maps in the Spanish and American archives
which bear upon the early history of the Philippines. Perhaps other repositories such as the British Library, the Bibliothèque Nationale in Paris, the Japanese Diet Library, and the Peking National Library might be places where photographic reproductions of certain historical maps and atlases of interest to the Philippines might be obtained.

In the development of any cartographic collection, a desiderata list is an essential tool for recording information on lacunae or gaps in the holdings. A systematic effort should be made to note missing maps and atlases of any significance. A comprehensive desiderata list can assist in determining which cartographic items are missing or wanting in a collection. It is also a useful checklist to use when perusing sales auction catalogs and may be sent to a map dealer to make them aware of certain wanted items for the library’s collections.

The acquisition of maps is often a major problem for the map librarian. Aside from the limitations of the amount of money available to spend on cartographic materials, there is always the question of what to procure. The map librarian must keep his clientele in mind when selecting materials for the collection. Regardless of clientele or the purpose for acquiring maps, there are several criteria which may be used for selection purposes:

1) Will the map meet the needs of the user?

2) Does the map portray the cartographic information clearly?

3) The accuracy of the map, precision of scale, type of projection, geodetic control, compilation authority, date of publication, and symbolization of cultural and physical features are factors to be considered.

4) The registration of the printed sheet, good use of colors, shading effects, matching of photographic detail, and type of paper used are other types of criteria for evaluation purposes.

Another problem for the map librarian is the security classification or caveats which are applied to current large-scale topographic map coverage in some countries. In the free world, long-standing tradition has made maps both numerous and relatively easy to acquire. This is particularly true for the countries of North America, Western Europe, the Philippines, Japan, Australia, and New Zealand where the major map producing agencies are under civilian control. There, maps are available to the general public through numerous public and commercial sale distributors. The Soviet Union, the People's Republic of China, Eastern European countries, some Arab countries, Pakistan, India, and Burma are countries which consider all maps 1:250,000 scale or larger as classified documents. Their major mapping agencies are under military control and basic policies are restrictive concerning public use or purchase of such items.

There are many other problems relating to the acquisition of cartographic materials whether from domestic or foreign sources. Current bibliographies, annual reports from official mapping agencies, map catalogs, map indexes, and price lists of maps and charts are often lacking, restrictive, or so limited in distribution that they may be useless for acquisition purposes. Sometimes there are limited editions or quantities of cartographic materials published due to shortages of paper, printing supplies, and budget restrictions. Xenophobia is a problem in some countries. Correspondence in foreign languages may
be a problem in the communication process. Postal service is not always reliable and trustworthy.

As the economic base of a country expands along with the infrastructure, a noticeable increase of cartographic materials is a by-product. With the automation of mapping techniques and equipment, new types of cartographic products are becoming available. These include computer generated products, the digitizing of cartographic data, use of satellite imagery, and new types of cartographic and surveying equipment.

Mapping operations have been automated in many countries during the past 20 years. Such devices as the Universal Automatic Map Compilation Equipment (UNAMACE) were developed about 12 years ago to speed up the extraction of elevation information from stereopairs of photographs. The UNAMACE uses an electronic device to scan and match corresponding imagery from these stereophotos. This evolutionary development has greatly increased the production and availability of cartographic materials.

Use of satellite imagery from Landsat 1 and Landsat 2 is accelerating throughout the world mapping community. Applications of satellite imagery has been used to revise maps at scales as large as 1:50,000 by the Canadians. The United States Defense Mapping Agency has used satellite imagery to revise hydrographic charts of international waters. The United States Geological Survey is using satellite imagery to compile 1:500,000 scale mosaic maps of the States for regional geologic studies and to show the general extent of flood plains.

The use of new cartographic equipment such as the Gestalt Photo Mapper II (GPM2) automatically corrects for the distortion of aerial imagery and concurrently produces orthophotographs. The production of corresponding terrain data in contour and digital (magnetic-tape) form is another technological breakthrough in cartographic production. There are new developments for the production of thematic maps by using the methods of multispectral remote sensing from satellites and from aircraft.

The prospects for future cartographic acquisitions are indeed promising. The future cartographic collection may differ greatly from today's map libraries. In the future, there may not be a need to retain or even obtain original copies of cartographic materials. All cartographic data will be completely digitized and maps will be available only as microforms. This means that a customized map can be produced for a user by selecting and programming the type of digitized cartographic data required. Such a map can be displayed on a videoscreen and reproduced for immediate use in single or multiple copies, by scale, type of projection, selected subject matter, and of any geographic area. This will be a very expensive system which will require national support and financial assistance.

In conclusion, the systematic acquisition of cartographic materials is necessary to assure that research and reference tools are available to the user. There are numerous sources and references which can be used in the procurement of maps, atlases, and related cartographic materials. Sometimes, problems are encountered during the acquisition process. All procurement efforts will eventually result in a specialized or comprehensive cartographic collection which will satisfy the user. This is the goal for all map librarians.
LANDSCAPES OF NEVADA*

by

John G. Houghton
Associate Professor of Geography

and

Terrill J. Kramer
Assistant Professor of Geography

Geology-Geography Department
University of Nevada, Reno

This paper illustrates different views of Nevada's geography—both physical and cultural—for different purposes. In portraying the landscape, do we want to show statewide patterns or local details? Description or origin of the land features? Single features or inter-relationships? The purpose will determine the map, diagram, or photograph used to show the landscape.

Landforms. (1) A shaded relief map of Nevada effectively depicts the Basin and Range topography, with more than 300 mountain ranges statewide as seen from several thousand kilometers above the surface. (2) A Skylab photo of the Las Vegas-Lake Mohave area, including the Spring Mountains and Colorado River, appears quite similar though the scale is 10-times as large. To interpret individual landforms a still larger scale is needed. Compare (3) the basin-range diagrams, illustrating landform development at different stages of the fluvial erosion cycle, with (4) the Death Valley photo illustrating youthful fault-block mountains, alluvial fans, and a playa as seen from 3400-meters above the valley floor on Telescope Peak.

The effect of past environments is illustrated by (5) the Pleistocene Lakes map of the Great Basin, which shows a pluvial pattern very different from the present-day aridity. Nevada landforms created in the Pleistocene include (6) the glacial cirque on Wheeler Peak, and (7) Pyramid Lake with its tufa outcrops formed below the surface of pluvial Lake Lahontan, and terraces illustrating much higher water levels in the past. (8) Detailed examination of weathered tufa is possible with a close-up photo showing the rock surface on the screen at more than twice its life size.

Climate. (9) A state climate map shows the climatic diversity caused by Nevada's topography, but is a gross abstraction of the actual landscape. (10) A state vegetation map shows a major environmental response to climate, but for local details a much larger-scale view is needed. (11) A profile of mountain vegetation shows that a single mountain range may have several very diverse climate-vegetation zones ranging from desert to alpine tundra, representing 30° of latitude change, in a horizontal distance of only a few kilometers. These zones individually are best illustrated by color slides showing

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* Presented at the Fall Meeting of WAML, October 11, 1978, Reno. The talk was accompanied by a presentation of slides.
(12) creosote bush in the hot desert of Death Valley, (13) shadscale in the colder mid-latitude desert at Sand Mountain, (14) the sagebrush steppe at High Rock Canyon, (15) pinyon-juniper woodland on the lower mountain slopes of Wheeler Peak, and (16) bristlecone pine in the humid continental subalpine forest 1,000-meters higher on the mountain.

Further information about the climate can be gained from (17) water balance diagrams showing the annual march of mean monthly precipitation versus potential evapotranspiration in different climates. The very large water surplus in the Sierra Nevada, and the smaller surplus in the mountains to the east, supports Nevada's few perennial streams which are the major water supply in the water-deficient settled areas. The dominance of Reno-type water balance in most valleys of northern Nevada, and worse conditions in the south, restricts most agriculture to (18) cattle ranching. The climate map and diagram, furthermore, depict only average conditions which mask extreme variability, as shown by (19) the 1969 winter at Mount Rose Ski Area, when damaging, paralyzing winter snows were followed by spring flooding. This contrasts with (20) the 1977 winter, when ski areas had to use artificial snow and reservoirs nearly dried up in the following summer.

Environment and economy. (21) Nevada's attractive environment is not without its problems, as illustrated by the pie graphs showing sources of air pollution. The principal problem is automobiles in western Nevada, heavy industry in central and eastern Nevada, and several major sources in Clark County which has the largest total amount of pollution. (22) Most industrial pollution is caused by a few large plants which process minerals such as copper. (23) Pollution problems are greatest during night and morning hours especially in winter, when the frequency of valley temperature inversions is highest. Nevada's high air pollution potential is caused by rapidly-cooled air on clear, calm nights draining into the valleys, causing inversions during nearly half the total hours per year. (24) Smog concentrations are greatest when an inversion occurs over an urban area such as Reno. (25) The map of gaming facilities shows that nearly all of the large casinos—and hence most of the people, business, and traffic—are located in the Las Vegas and Reno-Tahoe areas. (26) Outdoor activities such as camping, in contrast, are more widely-dispersed throughout the state, as shown on the campsite map locating each campground and showing the number of sites in each recreational district. These are found wherever water sports, mountain recreation, historic-geologic sites, or local parks are available. (27) Desert locations such as Warrior Point State Park at Pyramid Lake attract many Nevadans and visitors alike.

In a state with as rapid a population growth-rate as Nevada, and one in which there are few urban centers, it is not surprising that those centers are the most dynamic in terms of landscape. Indeed, the morphology of the urban landscape in Nevada is changing so rapidly that it is a continuing item of discussion and argument within each respective community. Are the physical constraints of a fragile environment being exceeded by urban growth itself, or by ill-directed urban growth? Is a perceived quality of life being eroded by change—by becoming too big—or too big, too fast?

The nature of urban landscapes can be shown using land-use mapping. Under the auspices of the Nevada Bureau of Mines and Geology, land-use maps are being prepared of all of Nevada's urbanized areas using the standard 7.5-minute USGS quadrangles as bases. By comparing such maps with what is known of previous land use, both the magnitude and direction of growth can be visualized as well
as the changing use of the landscape. The city of Reno can be used to exemplify this changing morphology.

Throughout most of its history, Reno enjoyed a steady, modest growth around the initial cruciform site on the Truckee River. As its first major industry, gaming, became solidly established in the 1930's, a well defined central business district developed, and through an unwritten "red-lining", commercial expansion in a spatial sense was severely limited. Surrounding this restricted business community lay the residential sections with their parks and schools. The university anchored the north side. Adjacent to this setting lay the Sierras and the farms and ranches of the Truckee Meadows. It is this image, the "City of Trembling Leaves" of which Walter Van Tilburg Clark wrote, that is remembered by residents of some length of time and which has been irretrievably altered during the last decade-and-a-half.

The numerical and spatial growth of Reno within the last fifteen years is a direct result of the city's relative location to and accessibility from the major population centers of northern California and the Pacific Northwest. When the linkages of Interstate Highway 80 were completed through Reno, time-distance was shortened to a degree that enabled a greater number of visitors - which in turn promoted spatial expansion of tourist industry facilities. A multiplier effect was set in motion whereby more residential development and more service support development was then needed.

The Interstate connection contributed also to the favorable relative locational aspects of Reno, in a new sense. If one takes a drive to the eastern extremity of the city he will notice acre after acre of gigantic warehouses constructed by major national business firms. With the favorable tax relief, provided for by Nevada's freeport law, the relative location of Reno to west coast urban centers has been enhanced. The result is this new warehousing industry with a concomitant demand for more people, more service, more space.

The explosive effect of location and accessibility may be seen on the land-use map. Among several morphological changes which have taken place, three are noteworthy in that they relate to the long standing perception of the quality-of-life with which we opened our remarks.

First, commercial development could not be long contained spatially, given the pressures of relative location and accessibility. Initially, commercial strip development was produced along South Virginia Street. Then the creation of a triple shopping center complex centered at South Virginia and Plumb Lane took form as a second commercial node, rivaling the central business district. Later, strip development took place on Wells Avenue and on Kietzke Lane. At the present time, major development is occurring within a triangular area defined by South Virginia, Kietzke Lane, and Plumb Lane. This area is destined to become the predominant commercial core of the city. It will be characterized by large shopping center complexes ringed by high-density apartments and condominiums.

This nodal formation has changed the character of the original central business district. It has become less and less of a business district to which residents come, and more and more a gaming center geared totally to the visitor, with associated hotels and motels. As a department store relocates,
a casino takes its place. As a dress shop moves into a shopping center, tourist parking is the replacement. The long-time Renoite has seen "downtown" re-located. Where once the rather staid, old Riverside and Mapes hotels were part of a mixture of business establishments, now they are just two of many such tourist oriented firms in the mold of such as the tacky Primadonna Club or the obscenely gash Circus-Circus. This is the dynamism of Nevada's urban landscape, but one which is disturbing to the long-time resident who wonders where it all will end.

A second morphological change is seen within the already existing urbanized area, as one land-use encroaches upon another. It seems to be in the nature of urban growth that commercial uses or high density housing will gradually displace the single family residence. As observable on the land-use map, this is taking place in predictable areas at such a rate as to make this map largely obsolete, except as a historical document. Note, for example, the areas north and south of the railroad tracks, to the west of Virginia Street and north of the tracks east of Virginia Street. Or note the area south of the Truckee River between Virginia Street and Wells Avenue. The older homes which once graced these sections of the city are quite rapidly being converted to rooming houses on a short time basis or being razed for commercial or multiple residence purposes. Although such character change as this in the community is also disturbing to the long-time resident, fortunately it is being carried on at such a rapid rate that there is little time for the deterioration to take place which so often occurs in transitions of this sort. Reno appears to be spared any extensive ghetto formation.

The third morphological change is that which involves the displacement of actively used rural land by urban occupancy. Here the local example is the eroding of the Truckee Meadows by both commercial and residential purposes. The Meadows themselves are largely defined by the major irrigation ditches which encircle them. Cattle and alfalfa, so symbolic of the valley, are in the process of being replaced at a rapid rate by housing developments, condominiums and the commercial institutions to service them. Possibly of all the changes occurring in the area, this one is the most distressing to the long-time resident who perceives the community not just in terms of the city but the city in its setting. To many, the term Truckee Meadows is synonymous with Reno. It is a completeness which is violated by seemingly irresistible change.

What is shown here is also seen in the land-use mapping of Carson City, of Las Vegas, and of the south shore of Lake Tahoe. To many, perhaps a majority in this state, a certain quality of life is being eroded. We are becoming too big, too fast. In the final analysis, it may well be the factors producing the natural landscapes you saw earlier in this presentation which will say to urban development, "thus far, but no farther".

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Environmental Mapping in Nevada

by

John W. Bell
Nevada Bureau of Mines and Geology

I was pleased to accept Mary Ansari's invitation to speak to you this morning because the Nevada Bureau of Mines and Geology has a continuing interest in map production and map use, and it's very seldom that we have the opportunity to describe our program to groups such as the Western Association of Map Libraries. This type of presentation has a two-fold benefit for us: first, it allows us to pass along to others what we feel have been the successes and pitfalls of our program; and, secondly, it allows us access to feedback which we can use in improving our program.

I would first like to preface my talk with a brief description of the activities of the Nevada Bureau of Mines and Geology. We are the research and public service arm of the Mackay School of Mines here at the University of Nevada-Reno. We are charged by law with the primary responsibility of producing and disseminating geologic and mineral resource information throughout the State. Contrary to what our name implies, we have very little to do with day-to-day operation of mines in the State. Although many of our activities are centered around mineral resources, we also develop geologic data for a broad spectrum of interests, some of which are in urban geology or what might be called the physical environment of urban areas. In recent years there has been an increasing demand for data - especially in map form - related to the physical elements of the major urban areas in Nevada, and in response to that demand we have developed what we term an Environmental Mapping or Environmental Folio Program.

So, what I would like to present to you this morning is a capsulized description of our Environmental Mapping Program: its scope and philosophy; the types of maps included; and some of the successes and pitfalls we've encountered.

Our Environmental Folio Program, initiated about 5 years ago, is designed to meet some of the demand for a more comprehensive physical data base in the major urban areas of Nevada, namely the Reno-Carson City and Las Vegas areas. Demand for a more detailed geologic data base - especially large-scale geologic maps--has always been high, so geologic mapping is given first priority in the program. In addition to satisfying the demand for technical geologic data, however, it is also felt that the production of other interrelated maps is warranted because of the broad spectrum of land utilization interests. In other words, there are several semi-geologic and derivative elements that are necessary physical parameters for land utilization which we feel are within the scope of our data production responsibilities.

I should, at this point, clarify what I mean by "land utilization". The term "land utilization", in the sense that I am using it, refers to activities related to the assessment and development of the physical aspects of the land. It includes more than land-use planning; it incorporates the interests of

Presented at the Fall Meeting of WAML, Oct. 12, 1978, Reno.
not only planners, but engineers, architects, developers, public officials, and so on.

In developing the scope of our program we evaluate examples of similar projects in other states and obtain input from the potential users of our products. From this we establish a format which we believe to be well adapted to what are some of the more specific interests in Nevada. In constructing a format, there are several ways for us to go. At one extreme it can be designed for a relatively small group of highly technical people who can reinterpret the information for the untrained, less specialized interests; or, at the other extreme, it can be designed to be used and understood by the general public. The format we have chosen to use, however, lies between these two ends of this "user spectrum". The format is designed to provide not only geologists but other trained professionals with information that remains technical, but which is interpreted and, to a large degree, simplified. This allows architects, planners, developers, public works officials and other related users to understand and use data that previously had been restricted to more highly specialized scientists. It also contains enough data, however, to allow the highly specialized users to extract data of interest to them.

All our environmental maps are done on a 1:24,000, 7½-minute quadrangle basis. Maps are initiated and completed individually, but upon completion of a series of derivative or related maps, they are collated into what we call the Environmental Folio. Each map has an abbreviated legend, allowing it to be used individually, but all of the maps for a particular quadrangle also have a short supplementary text incorporated into the Folio. So, when a Folio for one quadrangle is complete there are as many as 10 separate environmental maps contained in a bound volume with text.

To date, twenty-two 7½-minute quadrangle areas have been included in our mapping program, and they are primarily clustered around the Reno-Carson City and Las Vegas areas. This coverage will eventually be expanded, however, to include other urbanized and semi-urbanized areas throughout the State, such as Winnemucca, Ely, and Fallon.

Normally, the production of a 7½-minute quadrangle map, such as the geologic map, requires many months of field and laboratory work to bring it to a level of detail and accuracy generally expected by its users. For the Environmental Mapping Program, however, it is felt that a certain degree of detail can be sacrificed in order to provide more rapid completion and dissemination. Without doing so, given the budgetary and manpower constraints we have, we would be unable to produce the information at the time it is most needed: i.e., before urbanization. Consequently, a philosophy has been adopted that allows the production of what might best be called "detailed reconnaissance" maps. The maps are intended to provide a basic framework which is suitable for utilization as a guide and upon which further detailed and more site-specific studies can be initiated by the user.

This mapping philosophy has both its positive and negative aspects. On the positive side, the maps are disseminated quickly to users thereby allowing them access to information that they need; on the negative side, however, some of the map information is misinterpreted. Through perhaps our own fault, it is difficult in some cases for the user to understand the limitations of the maps. A case in point is our Reno earthquake hazard map. Major faults and
general areas of possible severe seismic shaking are outlined, thus giving geotechnicians, engineers, planners and local officials the ability to identify the general distribution of potential hazards. Not uncommonly, however, data is extracted from the map on a specific site basis and is used to prove or disprove the existence of potential earthquake hazard. This is a function for which the maps were clearly not intended.

The types of maps presently included in the mapping program are to a certain extent standardized; each quadrangle will, for example, have a geologic and hydrologic map. Other maps, however, are tailored to the character of the quadrangle's physical setting. For instance, quadrangles in the Reno-Carson City area will have earthquake hazard maps because of the significant seismic potential in this area; but the Las Vegas area quadrangles will include earthquake hazard as only one element of a more wide-ranging geologic constraints map because of the less severe seismic hazard in southern Nevada.

To date, the Reno 7½-minute quadrangle is the only one for which we have completed an entire map and text folio package, although many other individual maps for the remaining quadrangles are already available and complete folios are well along.

The complete folio for the Reno quadrangle consists of a set of 10 maps and supplementary text.

The geologic map provided technical data for the geologist and geotechnician as well as for the non-geologist who has been partially trained in the use of such maps. It remains a technical geologic map, but the level of detail is somewhat less than that of our standard 7½-minute geologic maps.

The tinted relief map provides terrain elevation information by color-coding increments of elevation. It's designed to assist all types of technicians in quickly evaluating terrain relief.

Similarly, the slope map provides terrain slope information by color-coding the degrees of slope. The map is produced through a photo-mechanical process which compares spacing of topographic contour lines and reinterprets this spacing into percent slope.

The soils map is basically a duplication of the Soil Survey map prepared by the Soil Conservation Service, and it outlines the type and character of surficial soils.

The hydrology map provides basic data on ground-water occurrence and character by outlining depths, probable yields, and quality.

In the Reno quadrangle, the geologic hazards map outlines earthquake hazards. In other quadrangles, as I mentioned, the hazard map provides other elements: flood, landslide, soil condition constraints.

The energy and mineral resource map is designed to provide information related to producing and potential areas of mineral resources - metallics, non-metallics, industrial, and sand and gravel resources - and geothermal energy resources.
The physical properties map is a derivative map based on the geology and soils maps and is designed to provide basic data on the engineering characteristics of the natural near-surface material.

The land-use map outlines existing land use (residential, commercial, agricultural, and so forth) and is included as part of the folio so that it can be used in coordination with the other maps in evaluating land utilization.

And lastly, a natural vegetation map is included in the folio. Although it is not as intimately related to the folio's scope as some of the other elements, it is an important physical aspect that is frequently used in soil studies.

Many of these maps and folios can not be produced without the cooperation and contribution of other organizations. Our environmental mapping program would not, I would say, be designed around complete folio "packages" without this outside participation. Such outside participation, in the form of state funding, co-operative cost-sharing and free contribution, have helped make this program very successful to date. For the Reno folio the U.S. Geological Survey has provided slope and topographic base information; the U.S. Department of Agriculture, Soil Conservation Service, has provided soils information; and various departments of the University of Nevada system have provided input: the Desert Research Institute has provided hydrologic data, the Geography Department has supplied land-use information, the Seismological Laboratory has provided earthquake data, and the Renewable Natural Resources Division of the Fleischmann College of Agriculture has provided vegetation information.

All of the map preparation is done in-house, except for the topographic base which is prepared by the U.S. Geological Survey and the actual printing is done by Williams and Heintz. All map drafts are submitted to us for editing and technical review, and then are prepared for printing by our cartographer who scribes lines, composes the explanations, selects colors and prepares color separates.

The cost of this mapping program is quite high, especially since all of the maps are printed in color, but the program is essentially self-supporting because preparation costs are recovered through map and folio sales. The cost recovery period for each map is about 10 years, and there are occasionally cash-flow problems when we are prepared to publish a new set of maps. But, based on sales history, as well as user interest, we feel that our environmental mapping program has been successful. To date, we have published 56 individual maps. Public demand for this type of information remains high, and we intend to continue the program indefinitely.

Most of the maps do not make very suitable slide copy, so I have not included them in this slide presentation. I have, however, displayed copies of the maps and folio here at the front of the room so that those of you that are interested can take a closer look at them after the talks are concluded. Thank you.

The Wall Street Journal of Friday, September 9, 1977 reported that the U.S. Board of Geographic Names was considering changing the name of Mount McKinley in Alaska to the Indian name of Denali.

The question, therefore: What has been, if any, the final decision on this "Mounting Controversy" and what is your source of information? (Ref: I.B. Vol. 10, No. 1, p. 91)

We do not yet have a final decision, but a source of information we've got; and what better source than the Board on Geographic Names?

Donald J. Orth, Executive Secretary, Domestic Geographic Names, United States Board on Geographic Names (USGS National Center, Mail Stop 523, Reston, Virginia 22092), has written The Editor (January 11, 1979) and provided background information and a current-status report:

"Enclosed is a summary report of the case from the beginning to December 1977. The Board on Geographic Names was to make a decision on the proposal at its December 1977 meeting. The Ohio Congressional Delegation, however, introduced legislation in the Congress which would retain the name Mount McKinley in perpetuity. The Board then deferred action since the Congress is the highest authority in the nation. The legislation was part of the Alaska Lands Bill which did not pass before Congress adjourned late last year. The Board then decided to consider the case again at its December 1978 meeting, but the Ohio Delegation informed the Board that it plans to introduce new legislation on the matter as soon as the 96th Congress meets this month. The Board on Geographic Names is presently deferring a decision to see if such legislation is introduced in the Congress."

U.S. BOARD ON GEOGRAPHIC NAMES, DOMESTIC NAMES COMMITTEE: SUMMARY REPORT on the Proposal to Change the Name: Mount McKinley to Denali (12-1-1977)

BACKGROUND

Mount McKinley, in Mount McKinley National Park, Alaska, with an elevation of 20,300 feet, is the highest elevation in North America. It was named in 1896 by William A. Dickey, prospector, who after returning to the "States" wrote an account of his adventures in Alaska in the January 24, 1897 edition of the New York Sun. He named the mountain "after William McKinley of Ohio who had been nominated for the presidency, and that fact was the first news we received on our way out of that wonderful wilderness." William McKinley was recognized as the "great protagonist of the gold standard," a cause which Dickey supported. This article, which included a sketch map, made the mountain known to the world outside Alaska.

Denali, reported to mean "great one," is the Tanana Indian name of the mountain. The Russian Americans called it Bolshaya Gora, meaning "big mountain."
Except for nearby Mount Foraker, named in 1899 for Joseph B. Foraker, United States Senator from Ohio, and Mount Rainier in Washington, named in 1792 for British Admiral Peter Rainier, Mount McKinley is, to our knowledge, the only other mountain name for which there has been a certain amount of objection through the years. The first proposal to rename the mountain Denali seems to have been made in books written by the Reverend Hudson Stuck. He was Archdeacon of the Alaskan missions of the Episcopal Church until 1920, and was a member of the first recorded party to have successfully climbed Mount McKinley in 1913.

**SUMMARY**

1. Senate Joint Resolution No. 6 of the Alaska State Legislature (March 7, 1975) requests the Secretary of the Interior, U.S. Department of the Interior, to direct the U.S. Board on Geographic Names "to officially designate Mount McKinley as Denali; and be it FURTHER RESOLVED that Mount McKinley National Park be renamed McKinley National Park."

   a). Passed by Senate 13-4
      Passed by House 24-9

   b). Changing the name of a National Park requires Congressional action.

2. Alaska State Geographic Board unanimously endorses the Resolution on February 7, 1975 and recommends that the name be changed to Denali.

3. On March 11, 1975 Governor Jay S. Hammond transmits a copy of the Resolution passed by the Alaska State Legislature to Secretary of the Interior Rogers C. B. Morton. The Secretary transmits the Resolution to the Board on Geographic Names without comment.

4. The Resolution was discussed at the April 8, 1975 meeting of the Domestic Names Committee, U.S. Board on Geographic Names. No action was taken.

5. The Domestic Names Committee reports on the name-change proposal at the April 15, 1975 meeting of the Board on Geographic Names. Similar, updated reports have been made at each quarterly meeting of the Board since that date.

6. At its May 13, 1975 meeting, the Domestic Names Committee voted to defer action on the Resolution at least six months. The name-change proposal involves making a decision of National importance. Time was needed to inform the American people and to receive their reaction to the proposal. It was also decided to seek the guidance of the U.S. Secretary of the Interior on how best to handle the case. The Board on Geographic Names, by law, works conjointly with the Secretary.

7. The National Park Service endorses changing the name of Mount McKinley to Denali on May 20, 1975.

8. Two letters, September 4, 1975 and January 21, 1976, from Governor Jay S. Hammond, State of Alaska strongly support the name-change proposal.
9. The Department of the Interior issued two press releases, August 4, 1975 and December 11, 1975, asking for public opinion on the name-change proposal.

The press releases were widely used and commented on in newspapers and magazines throughout the country. Response in the form of letters and petition signatures were received from about 7,000 individuals throughout the United States and several foreign countries. About 63% of the total favored the proposal to change the name of Mount McKinley to Denali. The percentage is about the same for those who wrote from Alaska. There was a large response from former Alaskans now outside Alaska and people who have traveled in Alaska; most favored the name change. Almost no "natives" people from Alaska wrote individually, but their feelings in favor of the name change were expressed in letters received from village councils or native corporations throughout Alaska during 1976 and 1977.

Opposition to the name change came from some travel and other business organizations such as the Kenai, Greater Anchorage, and Greater Palmer Chambers of Commerce. The Cordova City Council and the Matanuska-Susitna Borough, Inc. passed resolutions opposing the name change.

The organizations favoring the name change were generally conservation, recreation, or "nature" oriented. People living in the immediate area of the mountain and in the Fairbanks area show strong support for the name change.

10. On May 3, 1976 a letter strongly opposing the name change was sent to Secretary of the Interior Thomas Kleppe signed by all 25 members of the Ohio Congressional delegation. President McKinley was a native of that State. Congressman Ralph S. Regula, who represents the people of Stark County, the home area of William McKinley, has strongly opposed the name change.

11. At its July 14, 1977 meeting, the Board on Geographic Names decides that sufficient time has been given for public response, and plans two public meetings on the issue before making a decision. These meetings were announced in the Federal Register on August 25 and by a news release on September 15.

12. H.R. 39 was introduced in Congress on September 15, 1977, which, in part, recommends changing the name of Mount McKinley National Park to Denali National Park.

13. On October 25, 1977 a public meeting was held in the Auditorium, Interior South Building, 1951 Constitution Avenue, Washington, D.C. Mr. Charles E. Harrington, Department of Commerce, Chairman of the Domestic Names Committee officiated. The meeting was attended by seven other members of the Board on Geographic Names.

14. At the public meeting on October 25, Cynthia Wilson, assistant to U.S. Secretary of the Interior Cecil Andrus, announced that the Secretary strongly supports changing the name of Mount McKinley to Denali.

15. By letter, October 25, 1977, the National Park Service reiterates strong support for restoring the name Denali to the mountain.

16. On November 10, 1977 a second public meeting was held in the City of Anchorage Assembly Chambers, 3500 East Tudor Road, Anchorage, Alaska. Mr. Charles E. Harrington again officiated. Three other members of the Domestic Names Committee attended the meeting.
UNITED STATES BOARD ON GEOGRAPHIC NAMES

The United States Board on Geographic Names is a Federal body created in 1890 and established in its present form by Public Law in 1947. Comprised of representatives of several Federal agencies, appointed for a two year term, the Board is authorized to establish and maintain uniform geographic name usage throughout the Federal Government. Sharing its responsibilities with the Secretary of the Interior, the Board has developed principles, policies, and procedures governing the use of both domestic and foreign geographic names as well as undersea and extraterrestrial feature names. Although established to serve the Federal Government as a central authority to which all name problems, name inquiries, and new name proposals can be directed, the Board also plays a similar role for the general public.

With respect to domestic names, it is the policy of the Board to recognize present-day local usage or preferences when possible. To implement this policy, there is close cooperation with State geographic boards, State and local governments, and with the general public. When there is confusing duplication of local names or when a local name is derogatory to a particular person, race, or religion the Board may disapprove such names and seek alternate local names for the features. In cases where local usage is conflicting or weak, well established documented names and names with historical significance are given strong consideration. The Board also has a policy of not approving new domestic geographic names that commemorate or may be construed to commemorate living persons.

Any person or organization, public or private, may make inquiries or request the Board on Geographic Names to render formal decisions on proposed new names, proposed name changes, or names that are in conflict. Communications concerning domestic geographic names should be addressed to Donald J. Orth, Executive Secretary, Domestic Geographic Names, U.S. Board on Geographic Names, National Center Stop 523, Reston, Virginia 22092. All other inquiries should be addressed to Richard R. Randall, Executive Secretary, U.S. Board on Geographic Names, Defense Mapping Agency, Building 56, Naval Observatory, Washington, D.C. 20305.
PUBLICATIONS OF RELEVANCE

Contributors: see key to initials at end of p. 209.

- Alonso, P.A.G.

  This catalogue contains information from over seventy map agencies about published and proposed mapping, index maps and map catalogues available for Victoria. It is an annotated guide, oriented to the cartographic needs of urban and regional planners. Subject index included. 22pp., 30cm.

  $2.00 Aust. Make cheques payable to: Faculty Research Publications, Faculty of Architecture, Building and Town & Regional Planning, University of Melbourne, Parkville, 3052, Victoria, Australia. Post extra.

  Also available is an annual bulletin, *Research Information* (1978 is No. 2), which is a catalogue of faculty research and available publications as a result. Available from above address. Free.

- Alonso, P.A.G.

  This report on map information is a combination of directory and bibliography. The directory components cover map information specialists and government agencies while the bibliography is a selected list of maps and related documents. (52pp.)

- Alotta, Robert I.

  The stories behind the place names of America are sensible and nonsensical, reasonable and surprising. This book digs into the past and cites a colorful variety of maps and mishaps that went into the naming of our country.

  After tracing the major sources of place names, Alotta shows the reader how such detective work is done. In clear and simple terms, he tells what sources to go to for information, how to evaluate its accuracy, warning of pitfalls and frustrations. He describes a simple system for noting information on file cards and making accurate and complete records. He points out the uses of town and county records, the resources of libraries, interlibrary loan systems and networks. He tells how to find clues in old maps and new, in deeds and drawings.


Facsimile Maps: begun in 1976; this series now numbers 27. Each is $2.00 per copy (single-colour), and $10.00 for hand-coloured.

ACML c/o National Map Collection, Public Archives of Canada, Ottawa K1A ON3

No. 1: A new map of the world, with the latest discoveries. Samuel Dunn. 1794.


No. 3: A map of the North-Pole and the parts adjoining. M. Pitt. 1680. Hand-coloured.

No. 4: A map of America...exhibiting MacKenzie's Track. Alexander MacKenzie. 1801. (First crossing of North America by a white man. Basis for many later maps.)

No. 5: A new chart of the coast of New England, Nova Scotia, New France, or Canada, with the Islands of Newfoundld. Cape Breton, St. John's &c. N. Bellin. 1746.


No. 8: British Columbia. J. Conroy. 1862. (First map of B.C.; published at New Westminster by Royal Engineers)

No. 9: Chart of the N.W. Coast of America and N.E. Coast of Asia explored in the Years 1778 and 1779. London, 1784 (First edition of Cook's Chart)

No.10: Nouvelle carte des decouvertes faites par des vaisseaux russes aux cotes inconnues de l'Amerique septentrionale avec les pays adjacents. St. Petersbourg. 1754. (First edition of Mueller map, used by Cook.) Hand-coloured.

No.11: The north part of America. Henry Briggs. 1625.

No.12: A map of the Province of Upper Canada; describing all the new settlements, townships, etc. with the countries adjacent from Quebec to Lake Huron. David William Smyth. London. 1813.


No.14: Province of Manitoba and part of the District of Keewatin and North West Territory showing the townships & settlements drawn from the latest gov. maps, surveys & reports for "The Prairie Province" 1876. Published in H. Belden & Co., Illustrated Historical Atlas of the County of Carleton (Toronto 1879).
No. 15: Peter Pond's map of Western Canada, presented to Lord Hamilton, April 1785. Hand-coloured.

No. 16: A map of the Island of St. John in the Gulf of St. Lawrence divided into counties & parishes, and the lots as granted by government to which are added the soundings round the coast & harbours. Improved from the late survey of Captain Holland. Published by T. Jefferys; The American Atlas, London 1776. Hand-coloured.


No. 19: Le Canada fait par le Sr de Champlain ou sont la Nouvelle France, la Nouvelle Angleterre, la Nouvelle Holande, la Nouvelle Suede, la Virginie & c ... suivant les memoires de P. DuVal. 1653.

No. 20: River Detroit, W.F.W. Owen, 1815.

No. 21: Niagara Frontier, R.H. Stotherd, 1865.


No. 23: Proposed Canal ... J.G. Chewett, 1823.

No. 24: A map attributed to Lady Simcoe, 1795.

No. 25: Straits of St. Marie ..., 1761.

No. 26: Nova Franca ... B. Zaltieri, 1566.

No. 27: Nouvelle France, H.A. Chatelain, 1719.


Annexes include: Maps Produced in 1977-78; 1:100,000 Orthophotomap Production; High Altitude Black and White Photography Flown during 1977-78.

Bridges, Glenys, S.M. Hinton, and J. Mason, Maps and atlases: a carto-bibliography, Published by the Students Union Print Room, University College, Swansea. Price £1 plus 50p postage.

This is a bibliography of the Map Collection, University College, Swansea. Available from: Mrs. Glenys Bridges, Department of Geography, University College, Swansea, United Kingdom.
• Brun, Christian F. and James Clements Wheat.  

Reprint edition by W. Graham Arader III and The Holland Press, Ltd.,  
Press Cartographica.  
by Yale University.  
$60. Available in cloth case bound only. Limited edition of 500 copies.  

Forthcoming: Volume 1: The Mapping of Australia by R. V. Tooley,  
based on 12 issues of Map Collectors Circle,  
with a new index compiled by Douglas Matthews.  
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on eight issues of Map Collectors Circle, Index  
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edited by Stephanie Hoppen.  
Volume 5: The History of Cartography. Selected articles  
from the Journal of the Royal Geographical Soc.  
Volume 6: Printed Maps of the British Isles 1477-1650,  
a bibliography by R. W. Shirley.  

• The Catalan World Atlas of the Year 1375: edited, translated and with a  
comprehensive historical and cartographical commentary by Professor Georges Grosjean.  

Muller, International Booksellers by, P.O. Box 9016, Amsterdam, Holland.  
sFr1280 - (clothbinding); all-leather binding; add sFr280. A detailed  
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Editions J.A., 51, avenue des Ternes, 75017 Paris. Also available from  
Rudolf Muller, International Booksellers, B.V., P.O. Box 9016, 1006 AA,  
Amsterdam, The Netherlands.  

• Craven, Roger W.  
List of Braille maps and other aids in the study of geography.  

CN Mr. Craven is not in business, nor formally connected with any organization. He is a retired person whose hobby is making braille maps. The  
list is designed for teachers.  

Roger W. Craven, 6243 29th Ave. N.E., Seattle, Washington 98115  
or, Carl Nielsen, Library, Dept. of Geography, University of Washington,  
Seattle, WA 98195.
• Dami, Aldo

Les Frontieres Europeennes de 1900 a 1975; histoire territoriale de l'Europe. The Frontiers of Europe from 1900 to 1975; a territorial history of Europe.

Geneva, Médecine et Hygiène, 1978? Fr.s. 100 (78 Avenue de la Roseraie, 1211 Geneva 4), or; Rudolf Muller, International Booksellers B.V., P.O. Box 9016, Amsterdam, The Netherlands.

Former professor of historical, political, ethnic and linguistic geography at the University of Geneva, Dami has produced a work that obviously took many years to accomplish. 375 pages, 192 maps, all in color. It is divided into 5 sections:

1) From 1900 up to the treaties of 1919-1920
2) The League of Nations period
3) The Hitler period
4) The period of the Liberation
5) The frontier modifications affecting Switzerland, and the internal modifications affecting certain states.

• Documents associated with the Panama Canal treaties. Washington, Department of State, Bureau of Public Affairs, Office of Media Services, 1977.

64 p.; 27 cm. (Selected documents - Department of State, Office of Media Services ; no. 63). Inter-American series ; 113. Department of State publication ; 8914.

• Downs, Roger M.


xx, 284 p.; ill.; 24 cm. (Harper & Row series in geography).


The Greenwich geographical classification code for charts and maps. Greenwich, 1970. v, 31, 67 l. maps. 34 x 42 cm.

• Haggerty, James J.


• Harvey, Anthony P. and Judith A. Diment, editors

Geoscience Information; an international state-of-the-art review.

This publication constitutes the proceedings of the International Conference on Geological Information, held in London from April 10-12, 1978, sponsored by the Geological Information Group of the Geological Society of London, the Geoscience Information Society (USA), with the assistance of the Australian Geoscience Information Association, Association of Earth Science Editors (AEESE) and the European Association of Earth Science Editors (Editerra). London, 1979. Prepublication price $22. US

Order from: International Conference on Geological Information Proceedings; c/o Palaeontology Library, British Museum (Natural History), London SW7 5BD.
Henrickson, James S.  
xxii, 271 p.; maps; 28 cm. & atlas (49 p.; maps; 28 x 44 cm.). "Undertaken at the suggestion of Marshall C. Johnston as a supplement to the ... flora ... he and his collaborators are compiling." Bibliography: p. ii-iii. (UCLA Map Library has a copy)

**Historical Plans of Cities in The Netherlands** Canaletto Publishing Co., 1978-  
A series of portfolios containing the most important plans of Dutch towns from the 16th to the 20th century: Amsterdam (published June 1978) Towns in North Brabant (2 portfolios) Dordrecht 11 Towns of Frisia Towns in Gelderland (2 portfolios) The Hague Towns in Groningen and Drenthe Haarlem - Leyden Towns in Limburg Towns in Overijssel Rotterdam Towns in North Holland Towns in the Province of Utrecht Utrecht (City) Towns of Zeeland (2 portfolios) Towns of South Holland (2 portfolios)

Houghton, John G.  
vi, 78 p.; ill. (some col.), maps (some col.); 29 cm. (Special publication - Nevada Bureau of Mines and Geology 2) Bibliography p. 75.

The Atlas contains 68 map sheets which include 103 maps in 3 - 26 colours (a total of 519 shades), scale 1:2,000,000. In ring binder with plastic binding. Format: 43.5 x 58 cm; map format 40 x 57 cm. Commentaries to each map in German and English. ISBN 3 7647 1714 4. DM 200.  
Both volumes must be purchased together.
• International Geographical Union.
  Commission on Applied Geography.

AB  Applied geography and the human environment : proceedings of the fifth
  international meeting, Commission on Applied Geography, International
  Geographical Union, August 2-8, 1972 / edited by Richard E. Preston.
  Waterloo, Ont.: Dept. of Geography, Faculty of Environmental Studies,
  University of Waterloo, c1973.
  xix, 397 p. : ill., maps ; 23 cm. (Department of Geography publication
  series ; no. 2) English or French.

• Irish Academic Press

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  Dublin 4, Ireland       1006 AA Amsterdam, Holland

• Lindsay, D. G.
  Sea-ice atlas of arctic Canada / D. G. Lindsay. Ottawa : Energy, Mines
  and Resources Canada, 1976-

AB  v. : maps (some col.) ; 28x39 cm. LIBRARY (at UCLA) has v. 1-2.
  Vol. 1 date on title page, 1974; on outside cover, 1975; on inside
  cover, 1976.
  Maps prepared by the Polar Continental Shelf Project and produced by the
  Directorate of Map Production, Surveys and Mapping Branch, Department

• Lø, C. P.
  Geographical applications of aerial photography / C. P. Lø. New York,
  Crane, Russak, c1976.
  330 p., 8 leaves of plates, ill. 23 cm. Includes bibliographical refer-
  ences and index.

• Memorias del Seminario Nacional de Mapotecas. Mexico, Comisión de Estudios
  del Territorio Nacional (CETENAL), 1977.

EP  305 p. 24 cm. CONTENTS: Informacion Cartografica; Organizacion de Mapo-
  tecas; Servicios de Informacion y Asesoramiento.
Calgary’s First City Plan: During the first decade of the twentieth century, the City of Calgary grew rapidly from 4,000 in 1900 to 44,000 in 1911, and it was felt that this growth could only continue. Many Calgarians wanted this growth to be orderly and felt that a planning scheme should be developed. City Planning Departments were not very common at that time and consulting professionals were available to undertake these tasks.

At this time, the Canadian Commission of Conservation invited Thomas Mawson from England to give a lecture in Ottawa on his concepts of city planning, which were firmly rooted in the current Garden City movement. A lecture tour across Canada resulted and Mawson was also asked to undertake planning schemes in various parts of Canada (i.e., Coal Harbour in Vancouver’s Stanley Park, Wascana Center in Regina, and Dalhousie University in Halifax).

Calgary was the only Canadian City to invite Mawson to prepare a comprehensive planning scheme. Mawson’s preliminary report was presented to the City in 1914, but the earlier growth euphoria was quickly evaporating as the European disaster’s impact was being felt in western Canada. Mawson’s grand vision of the future Calgary would not be followed as Calgary’s real-estate depression did not fully end until the 1950’s and new concepts of city planning were in vogue.

This part of Calgary’s history recently returned to local headlines when the original maps and drawings accompanying the 1914 presentation were found in a garage. They had been mounted on wall board and this wall board had been used to line the inside walls of a garage. Through the years they had become water stained and covered in fungus. The Canadian Conservation Institute offered their assistance to restore the maps and drawings. They were recently the subject of a public display to which David Mawson, Thomas Mawson’s grandson, was invited, and a series of talks on city planning were held.

To commemorate the return of these maps and drawings to public view, the City published the following book which includes many color illustrations of the maps and drawings from the plan: Calgary, Many Years Hence.

Also available is a microfilm copy of Thomas Mawson’s original report: Calgary: a preliminary scheme for controlling the economic growth of the City.

Morrow is available from the Centre at 750-9th Ave. S.E., Calgary; and the microfilm of Mawson is available for $2.00 Can$ from City Planning Library & Resource Centre, Box 2100, Calgary T2P 2M5.

Muehrcke, Phillip C.
470 p. 350 illus. Appendices include: Sources of Maps; Enlarging, Reducing, and Image Compositing; Map Care; etc.
This volume is a registry of 493 cartographic titles published in The Netherlands, imprint dates of 1975, 1976, and 1977. Prices and publisher of each map is given.

Cataloging is accomplished according to the principles of the International Standard Bibliographic Description for Cartographic Materials (ISBD(CM)) and is organized by authority in the main listing, and by region, subject, and title in other listings. Classification is according to the UDC (the Universal Decimal Code). Addresses of publishers is included. Index maps of the various series of topographic maps of the Netherlands produced by Topografische Dienst, Delft, 1:25,000 and 1:50,000 are provided. Dates of the latest survey are noted on each quad.

This registry is similar to the Catalog of Copyright Entries of the U.S. Copyright Office, but it is better organized and a better tool for the acquisition of maps of The Netherlands than any other publication.


- Naval Surface Weapons Center, Dahlgren Lab., Virginia $12.00 paper copy; NTIS; Government Reports Announcements (Vol. 77 No. 12) (June 10, 1977, p. 123).


The manual describes the map indexing system (MIS) component of the U.S. Fish and Wildlife Service's Geographic Information System. It explains how spatially related data which is used and needed by the Fish and Wildlife Service can be cataloged and filed in a comprehensible, partially manual, partially automated, library system. The manual contains a general overview of MIS components, directions on using the MIS to evaluate data bases, and suggestions on where to search if data is not in the system. An appendix provides examples of system commands. Report No. FWS/OBS-78/64. LC No. 78-600089 36 p. Release unlimited. GPO Depository Item I49.6/2:32
• Schilder, Günter
At least one volume will be published every year. World maps and maps of the continents and of separate countries will be included in the series.

Volume One: The World Map of 1624 by Willem Jansz Blaeu and Jodocus Hondius. 1977. Dfl. 165. Full size facsimile of the map consisting of 20 sheets, together forming a large world map measuring 244 x 165 cm. Size 44 x 55 cm. Printed in photo-offset on fine, heavy paper. Paperbound. ISBN 90-6072-118-7


10 sheets each 44 x 55 cm. If ordered before June 30, 1979: Dfl. 125. Edited by Schilder and James Welu.
Reproduced from the unique copy in the Sutro Library, California State Library branch at San Francisco Public Lib.

Nico Israel, Publishing Dept. Rudolf Muller
526 Keizersgracht  International Booksellers, b.v.
1017 EK Amsterdam or P.O. Box 9016
The Netherlands Amsterdam, The Netherlands


The atlas presents, on 65 cartographic plates, various aspects of Senegal past and present, both physical and human. 54 x 41 cm. 150 p.

• Serial Publications in Geography. Blacksburg, Virginia, Department of Geography, Virginia Polytechnic Institute and State University, December 1978. Compiled by John D. Stephens, Assistant Professor of Geography.

$2.50 (Dept. Geography ... Blacksburg, VA 24061) This title was first published in 1975. An annual publication, it is a bibliographic guide to the geography collection of the Carol M. Newman Library. The collection is sufficiently broad that this reference work can serve as a general bibliographic guide to serial publications in geography, cartography, and regional science. Issue No. 4 (1978) combines some features of a serials bibliography and a union list of serials. Beginning with the 1979 edition, it is planned to include review articles of selected serials, or groups of related serial publications.

• U.S. Forest Service.

Ecoregions of the United States. A 78-page booklet is intended to supplement the above titled map, which provides background information to assist the user in interpreting it.

Requests for additional copies of both the map and the descriptive booklet may be addressed to the Forest Service Regional Office, 324 25th St., Ogden, Utah 84401.

Sea-floor models are fabricated simply and inexpensively by using a programmed milling machine.


• Washington, University. Cartographic Laboratory. Color matrix used for production of the Coastal Zone Atlas. A color sheet that has all colors and combinations of colors used as a demonstration sample. Available free from Carl Nielsen, Library, Department of Geography, University of Washington, Seattle, WA 98195.

Also, Carl reports that two more volumes of the Coastal Zone Atlas (see Information Bulletin pp. 228-229 June 1978 issue for details) will be issued shortly: San Juan County, and Jefferson County.


Each section for different time periods has section called Geography and Maps; plus sections in index.


The Atlas of Canada in Bold Print contains 37 pages of original maps, a glossary of geographical terms, and selected physical statistics. It departs from normal cartographic practice by the use of large type-faces, heavyweight line and symbols, and basic unshaded colors. Symbols were designed and carefully tested for maximum clarity. One does not need to be visually handicapped to appreciate this Atlas. A French edition is planned for 1979. $8.95 from CNIB, 1929 Bayview Ave, Toronto, Ontario M4G 3E8.
ATLASES CATALOGED AT UCLA

by

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Associate Librarian (Cataloger)
University Research Library
University of California, Los Angeles

Goode, John Paul, 1862-1932.
1020
Goode's world atlas / Edward B. Espenshade, Jr., editor, Joel L.
G61S
1978
xii, 372 p. : col. maps ; 28 cm.
"Formerly Goode's School Atlas." On most maps: Rand McNally &
Company. Includes indexes.
1. Atlases. I. Espenshade, Edward Bowman, 1910-. II. Rand
McNally and Company. III. Title IV. Title: World atlas.
LC No. 78-313261

Oxford University Press.
1021
The new Cadadian Oxford atlas / prepared by the Cartographic De-
098n
partment of the Clarendon Press ; advisory editor, Quentin Stanford.
1977
xxiv, 172 p. : chiefly col. maps ; 26 cm.
"Contains a wealth of information on Canada in map form and sta-
tistics, and on the major countries of the world."
Includes bibliographical references.
1. Atlases, Canadian. 2. Canada--Maps. I. Stanford, Quentin H.
II. Title.

Kerr, Donald Gordon Grady, 1913-
1116
Historical atlas of Canada / D. G. G. Kerr ; [cartography prepara-
S1K46
tion by C. C. J. Bond ; drawing by Ellsworth Walsh ... [et al.]].
1975
iii, 100 p. : col. ill., col. maps ; 32 cm.
Bibliography: p. 97. Includes index.
1. Canada--Historical geography--Maps. I. Bond, Courtney C. J.
II. Title. LC No. 77-356671

Simpson, Wendy.
1117
Gulf of St. Lawrence: water uses and related activities; a car-
S145S61
tographic presentation. Golfe Saint-Laurent: utilisations des eaux
1973
et activités connexes; représentation cartographique. Ottawa,
v, 22 p. col. illus. (some fold.), col. maps. (some fold.) 51 cm.
(Geographical paper no. 53) English and French. Bibliography:
p. 21-22.
1. St. Lawrence, Gulf of. 2. St. Lawrence, Gulf of--Maps.
I. Title II. Title: Golfe Saint-Laurent: utilisations des eaux
et activités connexes. III. Series. LC No. 74-159581

Atlas of Maryland / by Derek Thompson, project director and editor ... 
1270
[et al.]. College Park : University of Maryland, c1977.
A881
1977
[continued on next page]
Atlas of Maryland  [continued from preceding page]

iv, 116 p. : col. ill., col. maps ; 22 x 28 cm.
"Produced by the Dept. of Geography, College Park Campus, University of Maryland." On cover: A commemorative edition.
1. Maryland--Maps. I. Thompson, Derek, 1938- II. Maryland. University. Dept. of Geography. LC No. 76-57793

1252 Urban atlas, tract data for standard metropolitan statistical areas : thru Albany-Schenectady-Troy, New York 1974 [i.e. 1975]
Tampa-St. Petersburg, Florida 1974 [i.e. 1975]
G Minneapolis-St. Paul, Minnesota 1974 [i.e. 1975]
1452 Omaha, Nebraska - Iowa 1974 [i.e. 1975]

"Selected census tract statistics as reported in the 1970 Census of Population and Housing, enumerated as of April 1, 1970."

G Goodman, Lowell Robert.
1440 The atlas of North Dakota / L. R. Goodman, R. J. Eidem. Fargo :
G622a North Dakota Studies, [1976]
1976 vi, 112 p. : chiefly col. maps ; 22 x 28 cm.
1. North Dakota--Maps. I. Eidem, R. J.; Joint author. II. Title. LC No. 77-352606

G Miller, John Frederick, 1928-
1461 Precipitation-frequency atlas of the Western United States /
11 v. : ill., maps (some col.) ; 40 x 55 cm. (NOAA Atlas ; 2) Scale of maps 1:2,000,000. Includes bibliographies.

G Durrenberger, Robert Warren, 1918-
LC Card No. 67-940
Cubola Productions. 
G 1560 Atlas of Belize / [designed, compiled, drawn and photographed by] 
1976 36 p. : col. ill., col. maps (some fold.) ; 28 cm. 
1. Belize--Maps. I. Title.

G 1571 San Salvador : Editorial Itzcalo, [1975?] 
G1A88 181 p., 163 leaves of plates : ill., maps (some col.) ; 25 x 37 cm. 

Ecuador. Oficina de los Censos Nacionales. 
G 1736 Compendio de información socio-económica de las provincias del 
G1E192 Ecuador / Oficina de los Censos Nacionales. Quito : La Oficina, 
1975 1975- 

v. in 
Carchi.--v. 3. Pichincha. 2 pts.--v. 5. Tungurahua.--v. 6. 
--v. 10. Loja. 2 pts.--v. 11. Esmeraldas.--v. 12. Manabí. 2 pts. 
--v. 15. El Oro. 
1. Ecuador--Economic conditions--Maps. 2. Ecuador--Social conditions--Maps. I. Title.

Guedes, Max Justo 
G 1775 Anônimo : Antônio Sanches c.1633 (atribuição da autoria de uma 
G934a carta nautica original da Biblioteca Nacional do Rio de Janeiro) 
de Documentação Geral da Marinha, 1970. 
38 cm. Includes bibliographical references. 
1. Coasts--Brazil--Maps--To 1800. 2. Nautical charts--Brazil-- 
To 1800. 3. Maps, Early--Facsimiles. 4. Brazil--Maps--To 1800. 
I. Sanches, Antônio. II. Title.

Rede Ferroviária Federal, S. A. 
G 1776 Superintendências regionais / Rede Ferroviária Federal, S. A. 
1. Railroads--Brazil--Maps. I. Title

Państwowe Przedsiębiorstwo Wydawnictw Kartograficznych, Warsaw. 
G 1951 Atlas historyczny Polski. [Redaktorzy: Władysław Czapliński, 
S1P19 Tadeusz Ładógórski. Wyd. 1.] Warszawa, PFWK, [1977] 
1977 [71 p., 54 p. of col. maps, 55 p. 32 cm. 
1. Poland--Historical geography--Maps. I. Czapliński, Władysław, ed. II. Ładógórski, Tadeusz, ed. III. Title.

Climatic atlas of the outer continental shelf waters and coastal 
G 2861 regions of Alaska / William A. Brower, Jr. ... [et. al.]. 
C84C61 Anchorage : Arctic Environmental Information and Data Center, 
1977 University of Alaska ; Asheville, N. C. : National Climatic 
Center, Environmental Data Service ; [Washington] : National Oceanic 
and Atmospheric Administration, 1977. [continued on next page]
Climatic atlas of the outer continental shelf waters and coastal regions of Alaska. [continued from preceding page]

Nova Scotia. Dept. of Development.
1975 8 v. in l : ill., maps (some col.) : 23 x 36.
Cover title.
No more published.

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(The thirteen-page LIST, compiled as of December 1, 1977, was published as a separate list and distributed with the Information Bulletin Vol. 9, No. 1. Copies of that list are still available from the Editor.) Additions and Changes for the period Dec. 1, 1977 to Jun. 1, 1978 were published on pp. 158-160 of Vol. 9, No. 3 (June 1978). Additions to November 1, 1978 were published on page 8, Vol. 10, No. 1 (November 1978).)

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BENCHMARKS!!

Edwin M. Bryan Jr., Bernice P. Bishop Museum, Honolulu, Hawaii, one of WAML's original Members, has not retired, as one might suspect from the fact that he discontinued his Membership. At the age of eighty he has limited his activities to several personal projects. He has not lost interest in WAML however, and has designated Lee S. Motteler, Geographer at the Bishop Museum, to continue in his place so that he can continue seeing the Information Bulletin.

We wish Mr. Bryan our best-of-luck, and success in the pursuit of those projects.

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