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How to Deal with Published Maps in Your Collection

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I am going to cover parts of a map, kinds of maps, cataloging, dating maps, storage and preservation, using maps in exhibits, and map digitization projects. I will also talk about how some archival collections organize, store, and preserve their maps and issues involved with maps that are removed from atlases.
First I’m going to talk about the parts of a map. Scale is the ratio of distances on the map to the actual distances they represent. A scale of 1:24,000 means that 1 inch on the map represents 24,000 inches on the ground or an area approximately 6 miles by 8 miles. Maps with a smaller number to the right of the colon cover a, relatively speaking, smaller area in greater detail than maps with a larger number to the right of the colon do. A map with a scale of 1:250,000 covers an area about 100 miles by 120 miles with less detail.
Coordinates are points of latitude and longitude. Latitude is the distance north or south of the equator. Longitude is the east-west position of a point on the earth.
Latitude lines are always the same distance apart—they are parallels. Lines of longitude get closer together as they get nearer to the poles.
Projection is a system to transfer the latitudes and longitudes in order to render the curved surface of the earth, which is three-dimensional, onto a two-dimensional piece of paper.
Relief is a representation of the elevation of the surface of the earth. Here the elevation is represented by contours and spot heights.
A compass rose shows the orientation of the cardinal directions, but they aren’t all as fancy as this one.
A cartouche is a panel on a map that encloses the title, sometimes the publisher or cartographer, the scale, etc.
A neat line is the line that encloses the detail of the map. When I measure a map in cataloging it, I measure the area within the neat lines.
The legend is the explanation for what symbols on the map mean.
There are many types of maps. I’ll mention some of the most common types. A political map shows where the boundaries of countries, states, territories, and counties are.
Geological maps show the layers of rocks and minerals under the surface of the earth.
Thematic maps show a specific topic or theme. This is a map of earthquake epicenters in Nevada. This is the map the legend I showed you is from.
Cadastral maps have to do with land ownership. One form of cadastral maps is plat maps, which show land boundaries and subdivisions.
Charts are a specific form of map, showing navigation through a fluid—nautical charts are for water navigation and aeronautical charts for navigation through the air. Nautical charts are also called hydrographic charts.
Road maps show roads.
Topographic maps are a type of physical map. They show the features of the earth’s surface. They are also called relief maps. Planimetric maps are maps that don’t show relief.
Tourist maps show points of interest and other information of value to tourists. This is a map of Las Vegas in 1947. Very often they are titled by the publisher as a tourist map.
Now that we know what kinds of maps there are, how do we go about getting some? We could contact a rare book dealer. The first two are ones the staff in Special Collections at my library has ordered from. Philadelphia Print Shop had some Nevada maps when I was there in January, but they were ones we already owned.

Many rare book dealers also sell maps
- Prints Old & Rare https://www.printsoldandrare.com/
Now that we have the maps, we need to figure out a way to organize them. Patrons won't use a map if they don't know the library or archive owns it. Cataloging improves access for patrons and staff. It provides for interlibrary loan and for less wear and tear on the maps, it lessens waste of staff time, it makes automated circulation and inventory control possible, and it makes lists and bibliographies faster to prepare. Use a standardized classification scheme such as Library of Congress’s G schedule or Dewey. Don’t wait to classify them until you have a lot—start when you have no more than a 100. Sheets in a map series are classified by the call number for the series as a whole. Each individual sheet does not receive an individual class number. Topographic maps can be arranged by title on the sheet within their call number. I did a small survey of archival map collections in Nevada, and one collection is arranged by date. Another is arranged geographically.
If your maps are classified by the Library of Congress G schedule, you can go to your map shelves and find the type of map you want. The call number range for Nevada maps is G4350-4354. General maps of Nevada will have the G4350 call number.
G4351 is for maps that have a particular theme like roads or geology or earthquakes. A letter and number combination that stands for that theme goes after the main part of the call number. These are called Cutter numbers because they were invented by Charles Ammi Cutter. For example, roads are P2, geology is C5, earthquakes are C55, and plat maps are G46.
G4352 is for an area like the Nevada Test Site. This is a map of rock types at the Test Site. The number is followed by a Cutter number for the area. The number for the Test Site, which is now the Nevada National Security Site, is N42. The Cutters for a theme can be put after the Cutters for the area such as C34 for this map for groundwater.
G4353 is for a county. All the counties in Nevada have their own Cutter numbers. This is a map of Lincoln County before it was divided into Clark and Lincoln Counties. The Cutter for Lincoln County is L5 and the Cutter for Clark County is C6. Once again, the Cutters for a theme can be put after the Cutters for the county.
G4354 is for a city. Cities in Nevada have their own Cutter numbers. This is a map of the Strip. The Cutter for Las Vegas is L35. The Strip actually has its own Cutter which goes after a colon after the Cutter for Las Vegas. It’s 2S8. Once again, the Cutters for a theme can be put after the Cutters for the cities.
The date in a call number for a map is not the date the map was published. The date in the call number is the date of the what the map is showing. For example, if a map showed the locations of all the Civil War battles that took place in 1864 but the map was published in 2014, the date in the call number would be 1864 not 2014. There is a place for the date of publication in the bibliographic record for a map. Last is a Cutter for the entity responsible for not just publishing the map but for the intellectual content of the map.
Sometimes a map takes up more than one sheet. A map might be made of plastic or tracing cloth or be a blue-line print. Another common note is the fact that there are inset maps—like US maps with little maps showing Alaska and Hawaii. Subject headings tend to be [place name] followed by –Maps. An example of another name would be if there was more than one cartographer involved in making the map.
I record an older map’s “fingerprints”. In other words, I record handwritten notes on the map, sections that have been colored by hand, and some condition notes because if the map were ever stolen and recovered, they could be used to prove it is our map since we don’t use ownership stamps on our maps. Scholars might also be interested in additions to the maps. If the map has been taken out of an atlas, I also record the page number or numbers. This is useful in deciding if a map is a duplicate of one I have already cataloged or when we’re looking at dealer’s catalogs to figure out if we already own the map. Older maps sometimes don’t have dates on them. They can have scale statements in rods or leagues, but there are conversion tables available. On the subject of maps taken out of atlases, rare book people say it is bad to take out the plates because it destroys the atlas and the context for the maps, but book dealers say an atlas may be damaged and have just a few good plates, so why not sell them separately.
How to date a map

• State and county boundaries change
• Country names and borders change
• County seats change
• Street names change
• Buildings are built, change names, and are torn down
• Parks are established
• Methods of making maps change

There is an online atlas of county boundary changes for Nevada. I have a book of the history of street names in Clark County. My library has a database of casinos. There are online histories of different institutions. A person can compare the map with a map of a know date. History books and books about place names are helpful.
This is a clock that was made by a company from a topographic map. The company marked on the map where our house is, so they had to use a map from 1963 or after as that is when our subdivision was started. I wanted to know the date of the map they used. There is a golf course our neighborhood is centered around, and it has changed names several times. It was the Stardust Country Club when it opened in 1961, and its name was changed to the Sahara-Nevada Country Club in 1969. It’s still Stardust Country Club on the clock, so it has to be before 1969. We have a 1967 Las Vegas topo in our online catalog, so I’m guessing that’s the year of this map.
Now that we have cataloged the maps, we need to preserve them. Encapsulation refers to sandwiching the map between two sheets of Mylar to protect it. Don’t laminate maps unless you don’t care about preserving them. The pieces of Mylar can be held together by sealing the edges with double-sided tape, by sealing the edges with heat, or by sealing them ultrasonically. However, the last two methods are very expensive.
Preservation Supplies

- University Products
- Gaylord
- Hollinger Metal Edge
- Conservation International Resources LLC
- William Minter Bookbinding & Conservation, Inc.

You probably already know where to get preservation supplies, but if not, these companies give good customer service. William Minter sells the ultrasonic welders.
Next we need to store the maps. There are various ways to store maps. It is difficult to get folders out of vertical cases, especially when the folders are full. Here is an example of a map folder. Maps can also be stored in compact shelving.
Here are sources for map cases.

- Mayline Company
- Ulrich Planfiling Equipment Corp.
- Archive Designs, Inc. (used to be Stacor)
- Spacesaver Corporation (compact shelving)
Historical events all happened in a place, so maps can be used to enhance exhibits on historical events. This was part of an exhibit on the attack on Pearl Harbor.
Here's an exhibit about mapping ownership of areas
Copies of local land survey maps in an exhibit in New Hampshire
This was an exhibit about geology and products that come from the earth.
Here’s an exhibit about last summer’s Olympics. This could be done for an anniversary of a historical event.
This exhibit uses a map to show where the cowboys in the National Finals Rodeo are from.
This is part of an exhibit on bird paintings that has to do with the scientific observations that came from Army exploring parties and from surveying for routes of the transcontinental railroad.
Maps illustrate historical events

More of the same exhibit
Exhibits can be used to display part of a permanent collection. These are some of our maps of California and Mexico.
More of our maps of California and Mexico.
And more yet our maps of California and Mexico.
Maps can be hung from picture rails. This could be done with framed maps.
Maps are also decorative and interesting when framed and hung on the wall. There are preservation concerns with displaying maps. Displaying them too long where they are exposed to light can fade them. They should not be framed in mats that are not acid and lignin free, and they should not touch wood in frames and cases for a long period of time. Moisture should be allowed to get into exhibit cases. There shouldn’t be material that can produce chemical gas in the exhibit cases. Maps shouldn’t have holes put in them to hang them unless they are copies.

- Light fading
- Acidic frames, mats, exhibit cases
- Material that out gas
- Moisture
- Holes in maps from hanging them
Maps are good subjects for digitization projects. They are often popular, visually interesting, locally relevant, and contain unique information. Of course digitizing them allows people to view them without coming to your collection. Digitization also allows them to be handled less, which prolongs their life. Digitization often facilitates research use because digital maps allow users to hone in on details that are very difficult to see in the physical item by using software tools and the power of high resolution. It may actually increase interest in visiting the map collection or accessing items that are not yet online. Users may share their own knowledge of the map. The institution that owns the map can sell rights to the images or copies of the maps.
Problems with map digitization projects

• May be copyrighted
• Sensitive data—location of petroglyphs, government installations, etc.
• Maps as part of other publications

It may be hard to find the copyright holder, and if found, they may not be willing for the image of the map to be put on the web. [story of maps for article]. There can be security issues with government facilities and with archeological sites on maps [story of petroglyphs]. May be hard to scan maps that are bound in publications—also have copyright issues.
Maps may have to be scanned by using a digital camera and a stand or scanned in sections and knit together with software because they are too big for the scanner. They may be too fragile to go through a drum scanner. Light can glare off encapsulated maps. It takes a lot of storage for these files, and the map images come up slowly because the files are so large. Specialized software like JPEP2000 is required to enlarge portions of a map. Once the maps are scanned, there needs to be system to store and retrieve the scanned images. Might need to outsource scanning of at least the large maps.
One question is how much are you going to correct the image of the maps? If you are going to do color correction, are you going to do it manually or let the scanner do it? It’s necessary to have naming conventions for the file names. Some maps cover more than one sheet, and some maps have another map or data on the back. The Lake Mead nautical chart and the Las Vegas tourist map I showed you have maps on the verso (back). There has to be a way to keep track of that. We add -1 and -2 to the end of the map number.
Metadata is data about data. It may be possible to export bibliographic data directly from your bibliographic records if you have cataloged your maps into the metadata for the scanned images. Otherwise it’s possible to cut and paste from the bibliographic records. The data can also be entered directly into Dublin Core fields. Dublin Core is a fairly simple metadata scheme.
Dublin Core metadata elements

- Contributor-- United States. Congress. Senate
- Coverage—West (U.S.)
- Creator--Frémont, John Charles, 1813-1890
- Date-- 1845
- Description--Scale 1:3,000,000. 47.35 miles to 1 in. (W 124°--W 94°/N 46°-- N 34°) ; 1 map ; 76 x 128 cm.
- Format--image/tif;
- Rights-- Not to be reproduced without permission.
- Source-- U.S. Senate
- Publisher-- University of Nevada, Las Vegas Libraries;
- Subject--West (U.S.)—Discovery and exploration--Maps
- Title--Map of an exploring expedition to the Rocky Mountains
- Type-- Still Image
- Language--English

Contributor is someone who contributed to the map such as a surveyor. Coverage is what area does the map cover. Creator is the cartographer. Format is the type of image. Our metadata records also contain the call number of the paper map, technical information about how the map was scanned, a number for the image, the name of the digital project, the URL of the project, and the genre, which is maps.
Technical metadata

• Format (DC Format): Image/jp2 /file size
• Conversion Specifications (not mapped): This file is derived from a high-resolution (300 dpi, 24-bit) uncompressed TIFF image that was scanned from the original using a Vidar TruScan Titan Atlas scanner, default color configuration. The TIFF files were converted into the JPEG2000 format.

Technical metadata has to do with the size and type of image, how the map was scanned, and what kind the file was and the format it was converted into.
Metadata can also have information on the condition of the map and on anything that has been done to preserve it. Metadata can also include information that is unique to the library’s copy of that map.

• Preservation (DC Description): Map is tearing along folds
• Local fields: Library’s copy has hand-written notes in pencil
Part of bibliographic record for same map

- Map of an exploring expedition to the Rocky Mountains in the year 1842 and to Oregon & north California in the years 1843-44
- by Frémont, John Charles, 1813-1890 and Abert, John James, 1788-1863
- Format: Map
- Corporate Author:
  - Edward Weber & Co and United States. Congress.Senate
- Publisher: U.S. Senate
- Date: 1845

This is part of the bibliographic record for the paper map that was scanned.
Here are sources to find the accepted form of geographic names. If your institution has an online public catalog (OPAC), that is one place to look.

**Thesauri for geographical material**

- **Getty Thesaurus of Geographic Names**


- Google
- OPAC
- Local map or local guidebook
These days people expect every digital map project to be like Google Maps. They expect to search by a bounding box, which is an area defined by coordinates, to be able to zoom, pan, and rotate the images, to download them to Facebook and to mobile devices, and to make comments and review the maps. We have developed software called Isis to allow graphic searches. They want to see detail, so they want high-resolution images, and yet they want fast loading times. Digital map collections can have the location of each map plotted on a Google map so patrons can find the area they want.
Our digital map project and our software

- Our digital map project: http://digital.library.unlv.edu/collections/maps
- Search by bounding boxes: Isis
  - http://digital.library.unlv.edu/software/isis
- Social commentary: dmBridge
  - http://digital.library.unlv.edu/software/dmbridge/overview
- Advanced viewer for digital images hosted in dmBridge:
  - dmMonacle
  - http://digital.library.unlv.edu/dmmonocle

Isis is an interactive graphical search tool for digital projects done in the digital collection management software CONTENTdm. dmBridge is a system developed at my library that allows people to comment on the digital images. dmMonacle is a viewer for digital images hosted in dmBridge to make very high-resolution images easy to view across a wide range of scales.
Other online map collections

• David Rumsey Map Collection:  
  http://www.davidrumsey.com/about
• Library of Congress map collection:  
  http://memory.loc.gov/ammem/gmdhtml/
• Perry-Castañeda Library Map Collection:  
  http://www.lib.utexas.edu/maps/
• Old Maps Online:  
  https://sites.google.com/site/oldmapsonlineorg/
Places to find answers to questions

- Map librarian group websites:
  - MAGIRT [http://www.ala.org/magirt/](http://www.ala.org/magirt/)
- Listserv: MAPS-L:
  - [http://www4.uwm.edu/libraries/AGSL/welcome_to_mapsl%20forum.cfm](http://www4.uwm.edu/libraries/AGSL/welcome_to_mapsl%20forum.cfm)

MAGIRT stands for Map and Geospatial Information Round Table and is part of ALA. There will be a LibGuide there on basic map librarianship that will go public just before ALA Annual in Las Vegas in late June. WAML stands for Western Association of Map Libraries. WAML’s website has a map librarians’ toolbox that has a lot of good information and a list of map collections in the West where you could look for someone to email or call with your questions. NACIS is the North American Cartographic Information Society. All these organization have journals or newsletters. There is also a map librarian listserv MAPS-L. Its headquarters is at the American Geographical Society Library at Univ. of Wisconsin Milwaukee, so its website has information on subscribing and access to the archives.
Credits

Images are all from UNLV’s Special Collections and most are from our digital map project.
Questions?

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