The following was presented at DMT'14
(June 1-4, 2014, Newark, DE).

The contents are provisional and will be
superseded by a paper in the
DMT'14 Proceedings.

See also presentations and Proceedings
from earlier DMT meetings (1997-2013)
http://ngmdb.usgs.gov/info/dmt/

Change is good: Designing a map revision policy for the digital age

SUPERSEDED

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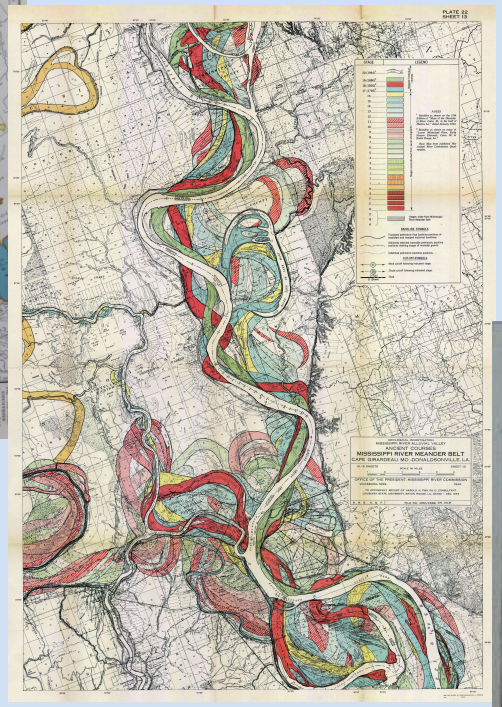
ILLINOIS STATE GEOLOGICAL SURVEY
PRAIRIE RESEARCH INSTITUTE

Background

- It began with one miscoded point.
- Led to a casual inquiry via DMT list serve
- The ISGS currently has no written policy on map revision.
- Therefore, a disclaimer: I am not a librarian or pubs editor; the views expressed here do not necessarily represent those of the ISGS, the University of Illinois, the Prairie Research Institute, etc.

Reasons for map revision

Change in political boundaries



Change in physical boundaries

New or more accurate data become available

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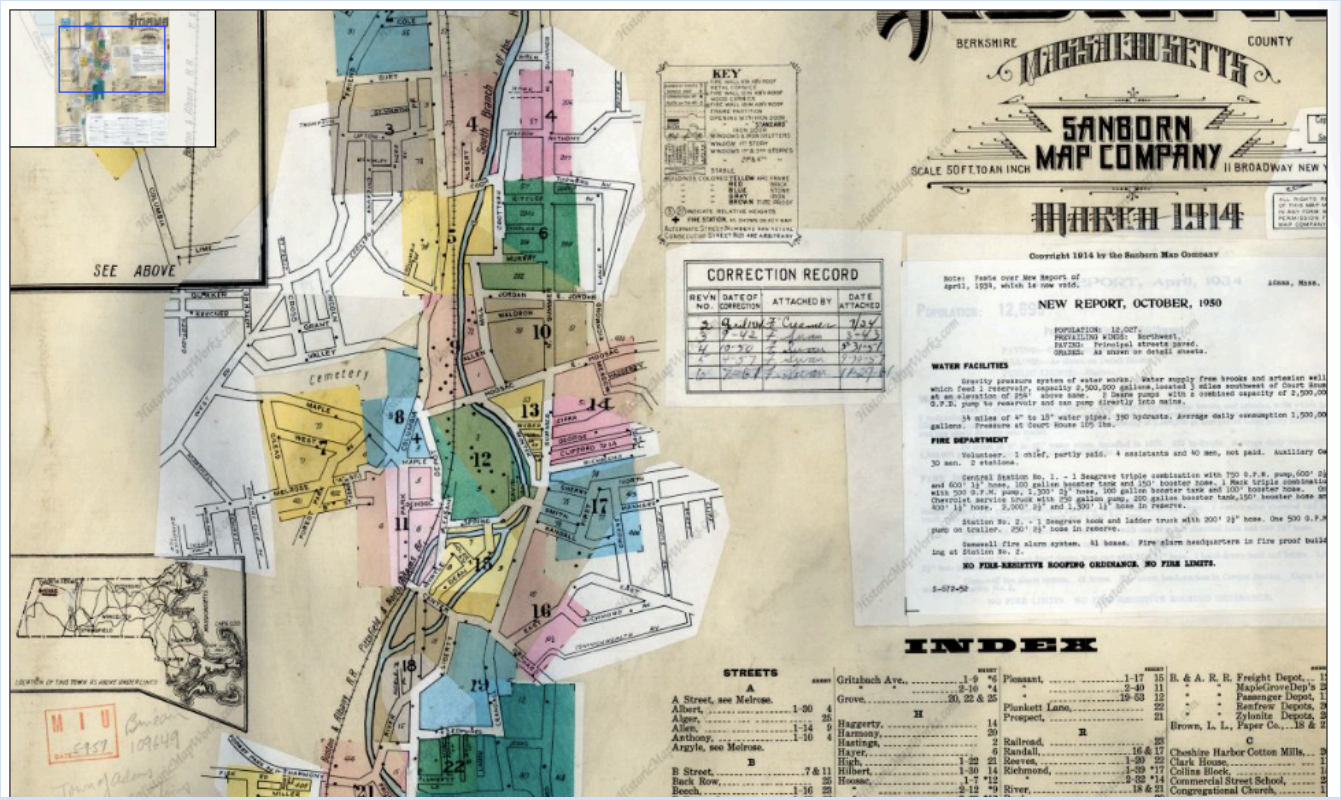
Reasons for map revision

"Mistakes were made."

Map revision old school

- Involved literally cutting and pasting



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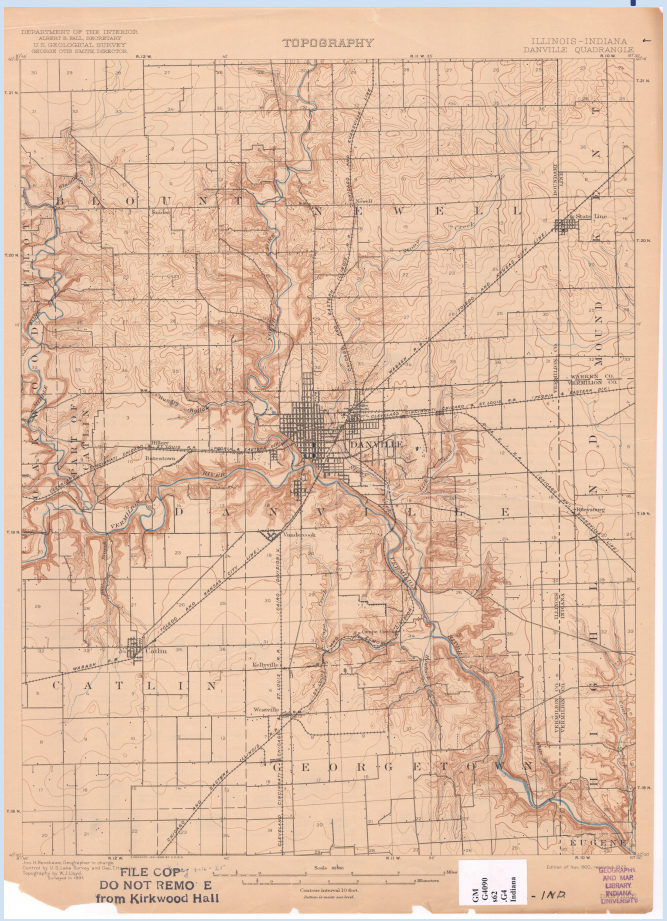
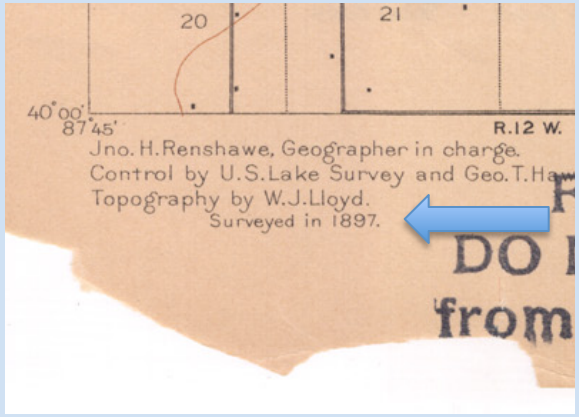
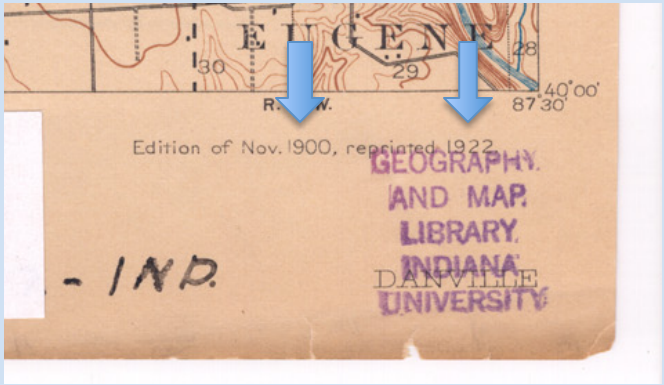
Map revision old school

- USGS historical topographic maps







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Modern map production and revision

Easier? or Harder?

- Changes made digitally
- Using software
- Undo button
- Just-in-time manufacturing of maps
- Digital delivery

- Lots of data and versions to manage
- Higher expectations for perfect maps
- Modern standards for metadata and academic cataloging
- Digital and paper products to maintain

Growing Pains

- Geologic mapping is undergoing a transition to true digital.
- Primary products are digital replicas—GIS and PDF--of the traditional paper map.
- We continue to apply protocols for revision that were developed prior to the digital age with its explosion of data and rapid obsolescence.
- Can we continue with current policies, or do we need to rethink?

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Balancing conflicting goals

- Deliver the most accurate, up-to-date, data for decision making in real-time
- Deliver data that is authoritative, consistent, standardized, documented, discoverable, and citable.

The Question: To revise or **not** to revise?

Reasons to revise

Reasons not to revise

- Cost-benefit questionable
- Users won't notice
- Not a functional change
- Metadata requirements
- Printing requirements

- **Error propagation issue**
  - Products should be designed in concert with the revision policy.
  - What is the primary product, paper or digital? NRCS example

The ISGS map production process

Review
- Scientific
- Cartographic
- editorial

Plotting, trimming, and folding

X

Maps, pamphlets sleeves

X

- Internal copies
- State library
- University libraries
- USGS in Reston

How much of this are we willing to do for any given revision?

Geodatabase
- QA/QC
- Metadata
- Distribution zip file with ArcReader doc

Internal digital archiving
- Read-only network location
- announcements

Web staff
- Create or edit web page
- Post PDF and GIS data
- Update interactive web map

Librarian
- Catalog entry
- Digital archive of plotting files
- Enter into the NGMDB

Sales office staff
- Update online store

Mascoutah Quadrangle revision

The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

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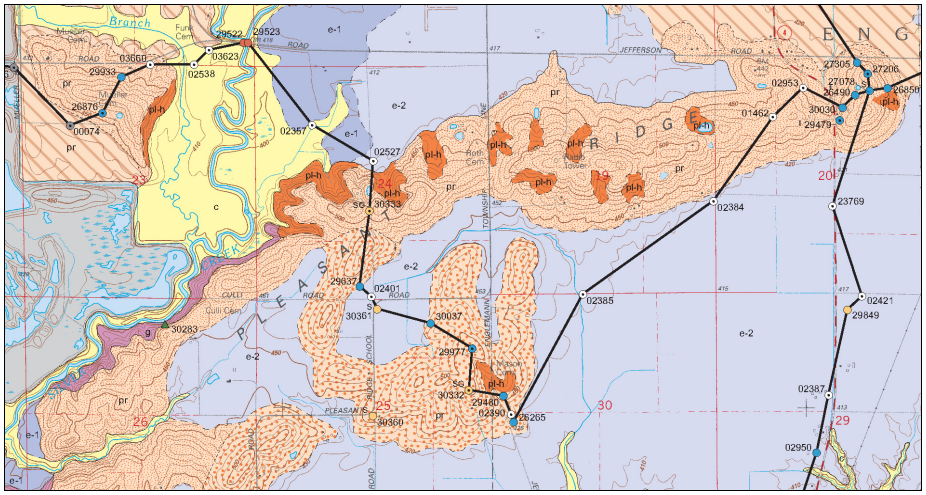

ERRATUM (12/01/2009): The above image is a corrected version of the central portion of the published map: Grimley, D.A., 2008, Surficial Geology of Mascoutah Quadrangle, St. Clair County, Illinois: Illinois State Geological Survey, Illinois Geologic Quadrangle Map, IGQ Mascoutah-SG, 2 sheets, 1:24,000, report, 9 p.

The pattern on the 4-mile-long morainal portion of the Pleasant Ridge shown in sections 24 and 26 (T1S, R7W) and sections 19 and 20 (T1S, R6W) should be the fine stipple pattern, indicating the mixed diamicton and sand facies of the Hagarstown Member buried by >5 feet of loess. On the original publication, the pattern of this portion of the ridge was incorrect.

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USGS revision policy

Trivial errors
- Misspellings
- Formatting text
- Correcting a URL
- Minor correction to a reference
- Lineweights
- Symbols
- Colors

Action required
- ✓ Users need not be notified
- ✓ Reprinted to replenish stock
- ✓ May be made online without revising print product

Substantial errors
- Correcting text
- Adding or changing part of a map
- Adding or changing a reference
- Improve the usability or interpretation of the product

Action required
- ✓ Access may be denied to old version
- ✓ Editor and author proof changes
- ✓ Create version history doc
- ✓ Announcements made

Critical errors
- False or biased statements
- Rampant quality control problems
- New interpretations
- New data tables

Action required
- ✓ Old product is removed
- ✓ Hard copies destroyed
- ✓ Create version history doc
- ✓ Notification
- ✓ New pub version number

USGS revision policy

U.S. Department of the Interior
KEN SALAZAR, Secretary

U.S. Geological Survey
Marcia K. McNutt, Director

U.S. Geological Survey, Reston, Virginia: 2010
Version 1.8, Revised July 2, 2013

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Suggested citation:
Weiskel, P.K., Brandt, S.L., DeSimone, L.A., Ostiguy, L.J., and Archfield, S.A., 2010, Indicators of streamflow alteration, habitat fragmentation, impervious cover, and water quality for Massachusetts stream basins (Ver 1.8, July 2, 2013): U.S. Geological Survey Scientific Investigations Report 2009–5272, 70 p., plus CD–ROM. (Also available at http://pubs.usgs.gov/sir/2009/5272/)

Version X.X

Critical error fixes

Substantial error fixes

State geological surveys' policies

- Few written policies
- Distinction between major and minor errors
- Dealt with on a case-by-case basis

Montana examples

GEOLOGIC MAP OF THE GREAT FALLS NORTH 30' x 60' QUADRANGLE, CENTRAL MONTANA

Compiled and mapped by Susan M. Vuke[1], Roger B. Colton[2], and David S. Fullerton[2]

Montana Bureau of Mines and Geology
Open File Report MBMG 459

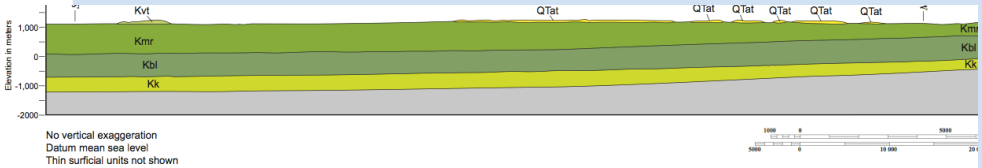
2002

[1]Montana Bureau of Mines and Geology
[2]U.S. Geological Survey

Revision 9/02
Explanation: Quaternary units and Kootenai Formation
Correlation diagram: made compatible with explanation revisions
Map: Slight adjustments in position of a contact and labels. Mislabeled Quaternary units in southeast corner map corrected.
Revision 3/03
Reference added
Revision 9/12
Edge-match with Choteau quadrangle

This report has had preliminary reviews for conformity with Montana Bureau of Mines and Geology's technical and editorial standards.

Partial support has been provided by the STATEMAP component of the National Cooperative Geologic Mapping Program of the U.S. Geological Survey under contract Number 01-HQ-AG-0096.



Montana Bureau of Mines and Geology
Open File No. 459

Geologic Map of the Great Falls North 30' x 60' Quadrangle, Central Montana

Compiled and mapped by Susan M. Vuke, Roger B. Colton, and David S. Fullerton

2002

Revisions	Date
Text & map	9/02
Text	3/03
Map *Edge matched with Choteau quadrangle to the west*	9/12