

Geologic Map Standards, on behalf of the Geologic Data Subcommittee

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Geologic Mapping Act of 1992

PUBLIC LAW 102-285—MAY 18, 1992

106 STAT. 171

facilitate planning and information exchange and to avoid redundancy.

SEC. 7. NATIONAL GEOLOGIC MAP DATA BASE.

(a) **ESTABLISHMENT.**—The Survey shall establish a national geologic-map data base. Such data base shall be a national archive that includes all maps developed pursuant to this Act, the data bases developed pursuant to the investigations under sections (4)(d)(2) (C), (D), (E), and (F), and other maps and data as the Survey deems appropriate.

(b) **STANDARDIZATION.**—Geologic maps contributed to the national archives should have standardized format, symbols, and technical attributes so that archival information can be assimilated, manipulated, accessed, exchanged, and compared efficiently and accurately.

Historic
preservation.
43 USC 31f.

Under this authority, on behalf of Federal agencies and the State Geological Surveys (AASG), the National Geologic Map Database coordinates development of geologic map standards and guidelines.

Standards development and the FGDC Geologic Data Subcommittee

- ❖ National Geologic Map Database (NGMDB) coordinates the development of standards and guidelines
- ❖ Standards and guidelines are widely reviewed, vetted, test-implemented, and published or posted to the Web
- ❖ Examples include:
 - ❖ Map symbolization
 - ❖ Database schema
 - ❖ Science terminologies
 - ❖ Publication and authorship citation guidelines
 - ❖ See <https://ngmdb.usgs.gov/Info/standards/>

Standards development and the FGDC Geologic Data Subcommittee

- ❖ Selected standards are identified as candidates for consideration and adoption by the FGDC
- ❖ These are brought before the Geologic Data Subcommittee, for
 - ❖ Subcommittee evaluation
 - ❖ Public Review
 - ❖ Adoption by FGDC
- ❖ Examples include:
 - ❖ FGDC Digital Cartographic Standard for Geologic Map Symbolization (https://ngmdb.usgs.gov/fgdc_gds/)
 - ❖ Database schema (https://ngmdb.usgs.gov/fgdc_gds/datamodelprop.php)

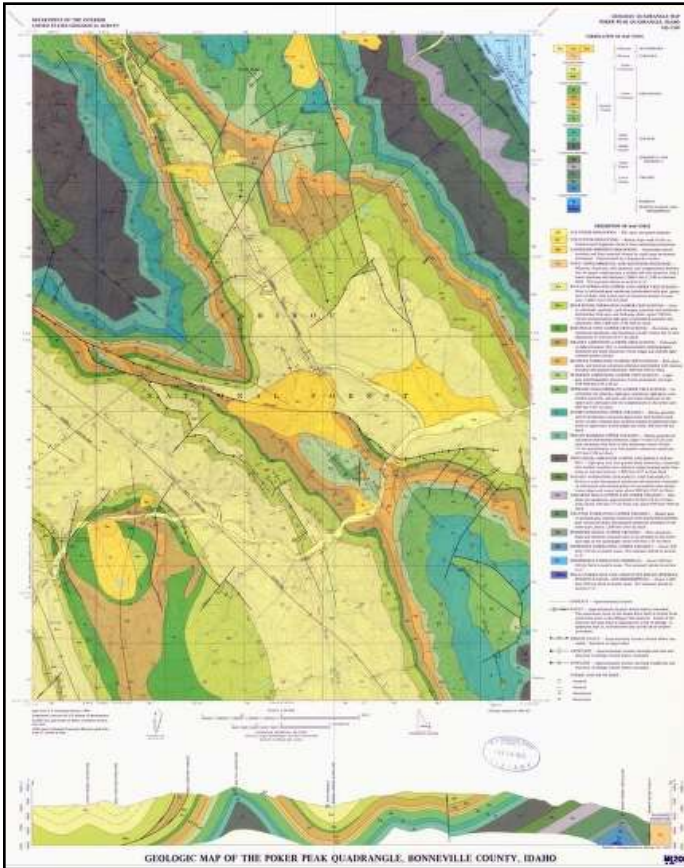
Status of the FGDC Geologic Map Symbolization Standard

- ❖ User support for the Standard is provided by USGS. Technical questions from users are addressed, requests for paper copies are filled, and suggestions for additions/corrections to the Standard are considered.
- ❖ Various implementations of the Standard are sought (e.g., ESRI, PostScript, CAD), but limited resources preclude active development.
- ❖ An update to the Standard is not planned for the near future owing to lack of resources.
- ❖ This Standard is an internationally recognized resource, widely used and respected.

Standard Schema for Geologic Map Databases

- ❖ NGMDB and collaborators began work in 1997.
- ❖ Proposal for Standard approved by FGDC in 2001 (https://ngmdb.usgs.gov/fgdc_gds/datamodelprop.php).
- ❖ USGS/AASG Data Model Working Group (1997 to ca. 2001)
- ❖ North American Data Model Steering Committee (2001-2005, <https://ngmdb.usgs.gov/www-nadm/>, <https://pubs.usgs.gov/of/2004/1334/>)
- ❖ USGS-AASG “NCGMP09” database schema (2008-present, <https://ngmdb.usgs.gov/Info/standards/NCGMP09/>)

NCGMP09 ArcGIS 10 geologic map template

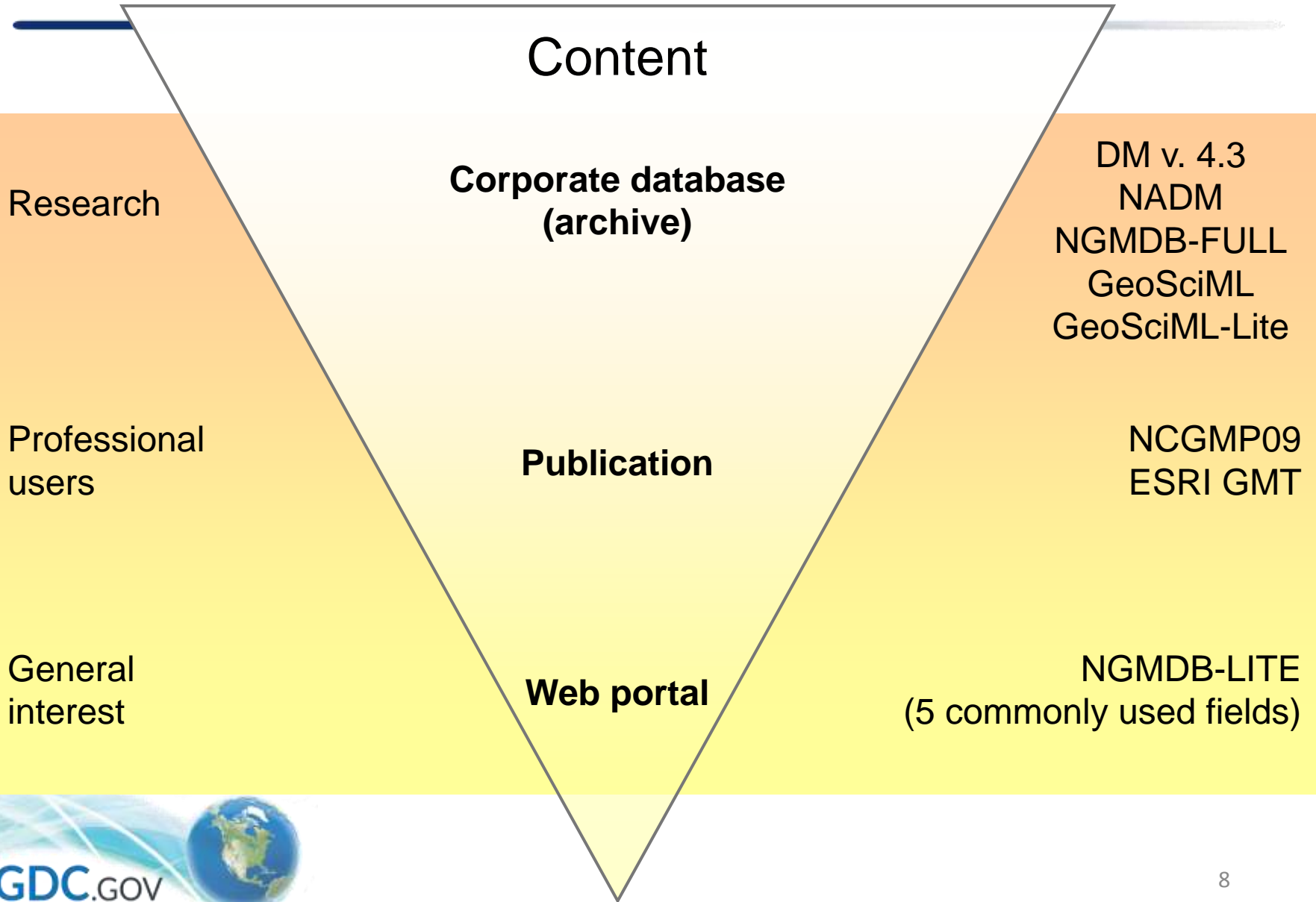


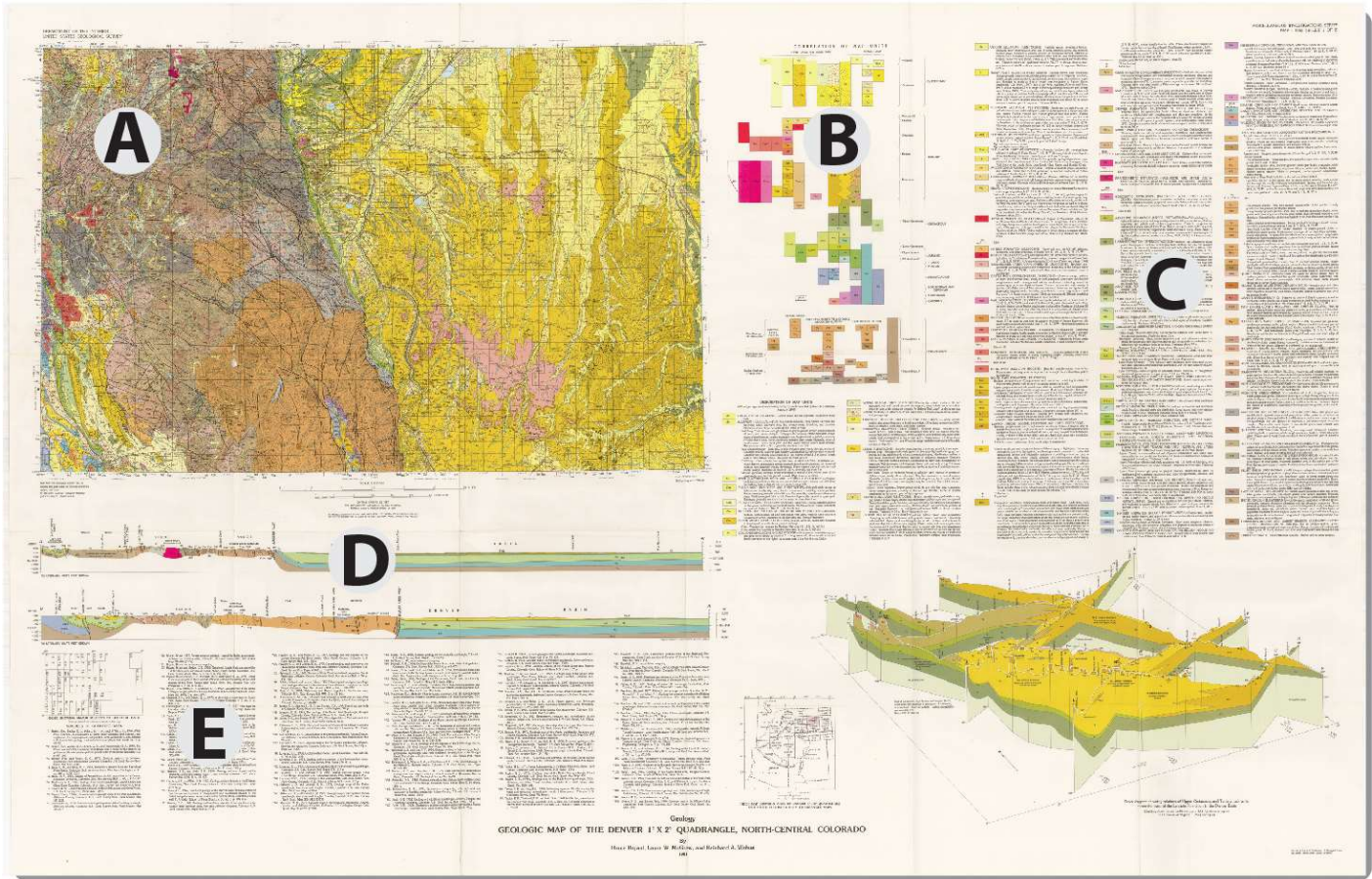
A database that contains all aspects of a traditional geologic map

- ❖ Geologic Map
- ❖ Description of Map Units
- ❖ Correlation of Map Units
- ❖ Cross Sections
- ❖ Discussion section
- ❖ References
- ❖ Geologic Terms, Symbols, Colors

<http://ngmdb.usgs.gov/Info/standards/NCGMP09/>

Variations on a single schema





NCGMP09 Schema for Geologic Map Databases

- ❖ Test-implementation by geoscience community (2009-2015)
- ❖ Lengthy discussions at Digital Mapping Techniques workshops (2008-2016)
- ❖ Revisions to NCGMP09 have been proposed and made (2016-2017)
- ❖ Revised document sent to NCGMP09 Working Group for comment

NCGMP09 Schema for Geologic Map Databases

- ❖ Version 2 (renamed as Geologic Map Schema, or “GeMS”) is in peer review. Publication by USGS anticipated in 2017.
- ❖ When approved by USGS, GeMS will be brought before the Geologic Data Subcommittee.
- ❖ We anticipate proposing the Public Review by early 2018.
- ❖ Resources will be needed in order to conduct the Public Review and prepare the standard for consideration by FGDC.

Questions?



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