DIGITAL MAPPING TECHNIQUES 2014

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

The contents of this document are provisional

See Presentations and Proceedings from the DMT Meetings (1997-2014)

http://ngmdb.usgs.gov/info/dmt/

Transitioning to the FGDC Draft Geological Map Database Standard: a Washington State Geologic Survey Pilot Project

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Motivation

❖ Data and metadata consistency

❖ Geologic Relationships

❖ Data Lineage

❖ Data sharing (NGMDB)

❖ Increased efficiency

❖ Improved products and services for users

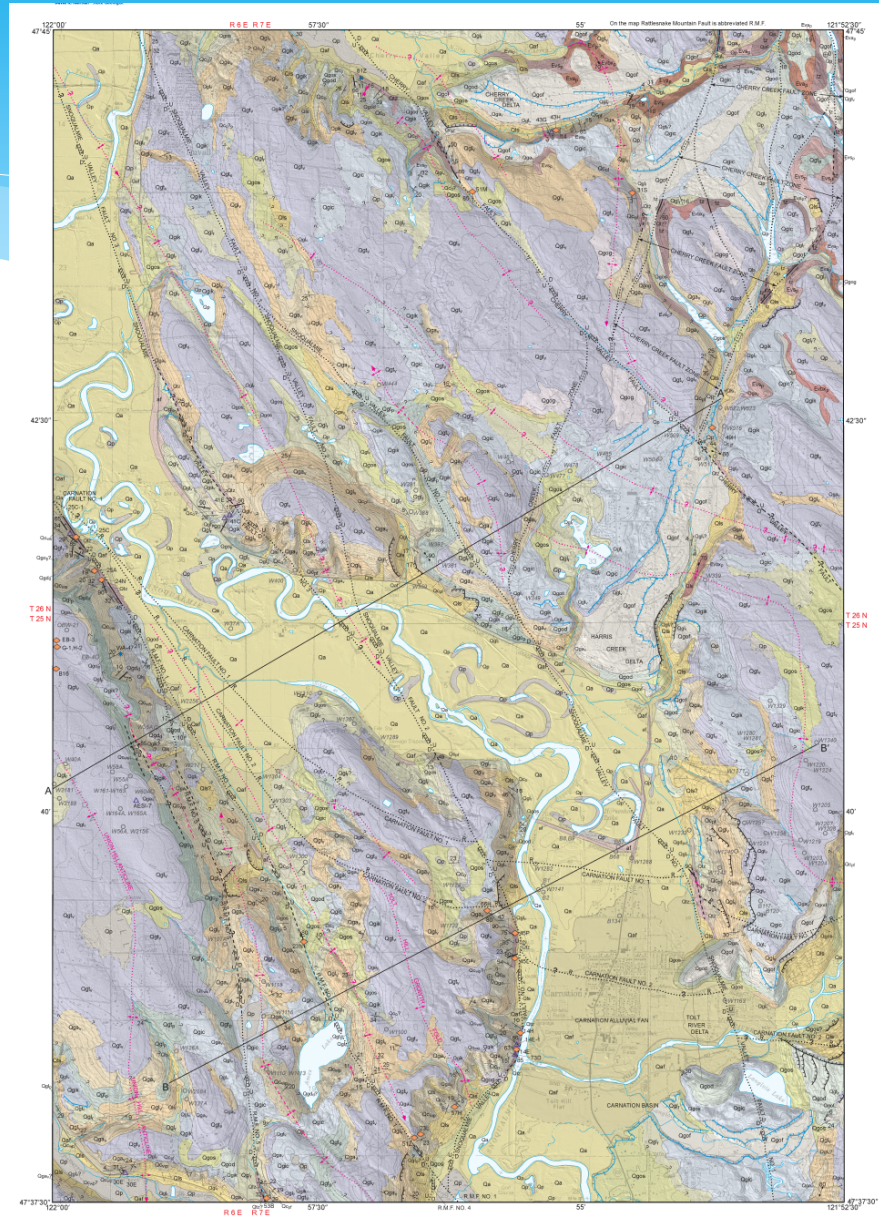   ❖ Science community

    ❖ Public information

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Project

❖ NSDI CAP-funded project (2012)

❖ Convert one DNR legacy 24K quadrangle to NCGMP09 schema

  ❖ Document transitional process in a cookbook form

  ❖ Document general experiences (concerns, challenges, etc.) for NCGMP09 developers

  ❖ Make these deliverables freely available to the public

❖ Deliverables in ArcGIS 10.1, Python 2.7.x

❖ Project website: https://sites.google.com/site/wadnrncgmp09/

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Pilot Project: Carnation 7.5-minute Quadrangle, WA
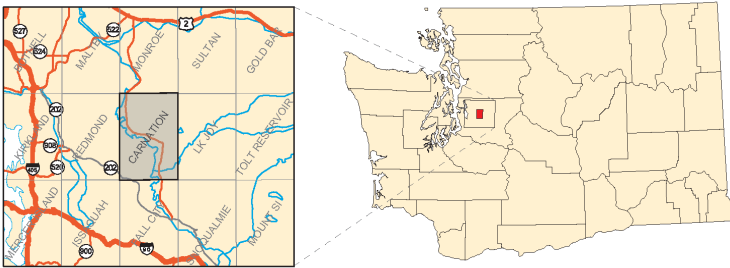
❖ Polygons: map units, water

❖ Lines: contacts, faults, folds, hydrology, cross sections

❖ Points: strikes/dips, geochronology/geochemistry, significant observation sites, wells

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Transitioning to the FGDC Draft Geologic Map Database Standard: A Washington State Geologic Survey Pilot Project

by Meredith C. Payne[1], Anne C. Olsen[1], David K. Norman[1], David Jaschke[1]

+ Add file   **+ Add link**   **Add from Drive**   **Move to ▾**   **🗑 Delete**

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|	File name ▲	Description	Size	Rev.	Time	User
▶	📁 DGER NCGMP09 Documentation (Remove)					
▶	📁 DGER NCGMP09 Geodatabase (Remove)					
▶	📁 DGER NCGMP09 Shapefiles (Remove)					
▼	📁 DGER NCGMP09 Tools (Remove)					
☐ 🖼	Carnation_NCGMP09_chart.png View Download	Chart of NCGMP09 geodatabase structure for the Carnation pilot project. Constructed in MS Visio.	550k	v. 2	Mar 18, 2014, 4:33	meredith payne
☐ X	Carnation_NCGMP09_Field_assignments.xlsx View Download	Carnation to NCGMP09 feature class field mappings workbook in xlsx format.	42k	v. 2	Mar 18, 2014, 4:32	meredith payne
☐ 📄	DGER_NCGMP09_tools.zip View Download	Tools used to create the migrated NCGMP09 geodatabase, including the original 1:24K map of the Carnation quadrangle (OFR 2010-1): Esri File Geodatabase, Map Plate (PDF) and Pamphlet (PDF). Key Value .txt files used to convert the Carnation quadrangle to the NCGMP09 model, Word DMU document generated to work with the NCGMP09v1.1_Tools2_Arc10.1 .docx to DMU	1687 2k	v. 2	Mar 27, 2014, 10:22	meredith payne

Result: Carnation Map, NCGMP09 version

NCGMP09 version of the Geologic Map of the Carnation 7.5-minute Quadrangle
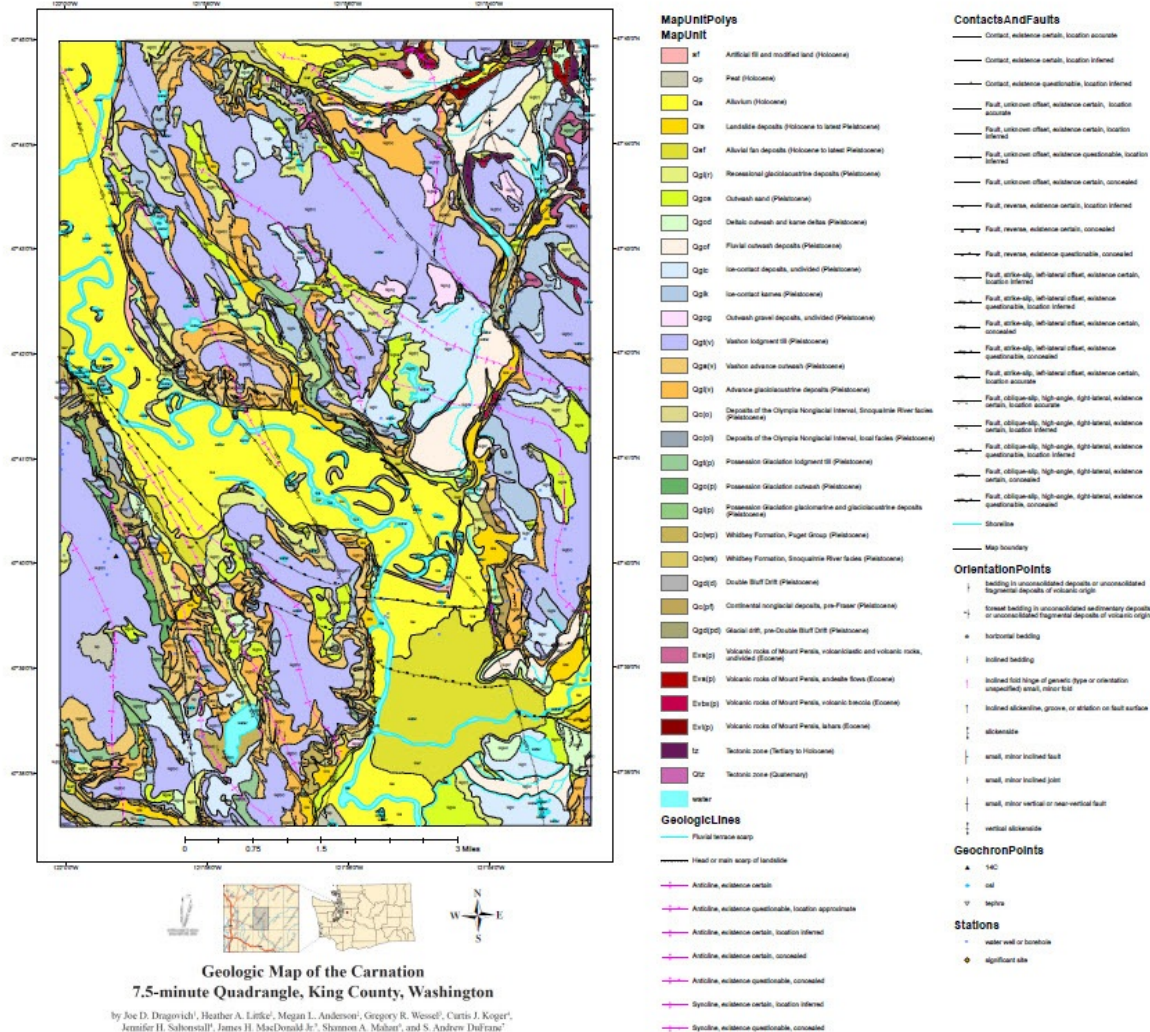
Legacy vs. New maps in NCGMP09

- Issues associated with legacy map conversion:
  - Quantitative vs. Qualitative values (esp. locational accuracy attributes)
  - Missing information, vague definitions
  - Does -9 as an unknown/unavailable value give the impression of poor quality mapping?
  - Representation of strange symbology and area overlays
- NCGMP09 lite? How much is enough for compliance?
- New maps can be planned with the NCGMP09 structure in mind.

Concerns

- DescriptionOfMapUnits
  - HierarchyKey, ParagraphStyle
- Feasibility of Computer Administrator Privileges
- Reliance on FGDC-STD-013-2006 symbology
  - sufficiency for complex Tertiary and Quaternary geology
  - potential future changes to symbol standard?

GeneralLithology—the Elephant in the room

❖ GeneralLithology: is something better than nothing?

   ❖ Geologists apparently can't decide

   ❖ Sensitivity to data manager (3rd party) decision making (esp. in the case of legacy data conversion)

❖ How else to devise a set of queriable lithology terms?

NCGMP09 requires change to current mapping methods

(particular to WA DNR, but potentially analogous to other agencies)

❖ LocationConfidenceMeters and other quantitative confidence measures

❖ Schema requires consistency

❖ Non-unique code issues

❖ Need to detangle or consolidate feature classes (for example, folds and scarps, contacts and faults)

❖ Parsing of attributes into individual NCGMP09 fields

❖ Keeping Notes and Commentary under control (and limited to appropriate fields!)

❖ Normalized vs. Denormalized

Another two Elephants

❖ TIME & MONEY

Website as a growing resource?

Thank you!

❖ Sincere thanks to Julie Binder-Maitre, Gita Urban-Mathieux (FGDC); Ralph Haugerud, Dave Soller (USGS); Ryan Clark, Janel Day (formerly AZGS).

❖ Project Website -- https://sites.google.com/site/wadnrncgmp09/

❖ Questions?

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