Breakout Session – Inventory of Karst Features and Hazards

Facilitator: Dan Doctor (dhdoctor@usgs.gov)

Needs:
- Discrete Features (ie, wells, springs) in a searchable database
- Cave locations/Conservation
  - Access to “secrets”
- Information related to drinking water quality
- Page of definitions, available index
- Water table estimations
  - Which flow system
  - Springs
  - Wikipedia
- Metadata
- What information is available?
  - Clearinghouse/ Directory of Information on features and data sources
- Protection of agriculture/arable land in light of development
  - Soil conservation
    - List of locations to protect (planners)
- Springs
  - Location
  - Temperature data
  - Flow
- Sinkholes
  - Susceptibility maps
- Land conversion
  - Orchards -> subdivisions
- Terrain
  - Model with aging
- Dye studies
  - Results, paths, dyes used
  - Mechanism for data capture
  - Documentation of dye studies centralized with registration process
- Safety
  - Engineering implications
  - Risk assessment of sinkholes
  - Pattern development
Site selection

- Springs
  - Geochemistry, flow
- Development sinkhole susceptibility by formation
  - Implications of development
  - Link failures to soil types
  - “limiting features”
- References/Guidance for GW protections and migration of sinkholes
- Pennsylvania Clearinghouse for spatial data
- Better methods for sinkhole remediation
- Site development
  - Education land designers on how to deal
    - Database of ideas
  - Guidance documentations for engineers and developers
- Consolidation into a Clearinghouse available in public domain
- Google Earth
  - Database available
    - Scale and source validation
- Geologic Constraints
  - Fracture data
  - Remote sensing

What is out there?
- Websoil Survey NRCS
- VDOTs holes disappear (inventory needed?)
- County databases
  - Clarke County
- Geologic maps
  - USGS
  - VA DMME
- VDOT, NRCS, USDA historical photos (starting in the 1930s)
- Topographic maps
- Spring database
- Dye trace database
- Well construction database
- Drinking water developmental samples
Breakout session - Data Preservation Issues; 10:30 AM – 12 noon
Facilitator: W. Lassetter

The USGS National Geological and Geophysical Data Preservation Program (NGGDPP) was established under the Federal Energy Policy Act of 2005, and has provided financial support to State geological surveys to organize their data collections and assist in the creation of a national metadata catalog, the National Digital Catalog. The NGGDPP has been targeted for elimination from the federal budget starting in Federal FY 2011. DGMR is naturally concerned about this development and the impact that it will have on Virginia’s long term data preservation project.

The theme of this breakout session was data preservation, specifically the methods that DGMR has developed and the challenges faced by state geological surveys, universities, and other institutions interested in preserving geologic and geophysical information for future access.

The group of approximately 15 participants engaged in an open discussion of the value of preserving geologic data, citing examples of how properly archived geologic data was used to discover new resources or help solve modern day problems. Case histories included use of physical specimens such as drill core, well cuttings, and reference rock materials, as well as historic published and unpublished geologic maps and subsurface boring and drill logs. A brief overview of DGMR’s long term data preservation project was given. Discussions continued as the group toured the DGMR Geological Core and Sample Repository that is housed in the Administrative Support Facility (ASF), adjacent to the central office building where the symposium was held.

DGMR Long Term Data Preservation Project
Serving as Virginia’s geological survey, the Division of Geology and Mineral Resources (DGMR) is responsible for gathering and disseminating geologic and mineral resources information to encourage the wise use and sustainable development of those resources. Since the early 1900’s, DGMR has collected and archived reference rock specimens and associated thin sections, core samples, well cuttings, and fossil materials. The Division also maintains collections of geologic maps, historical photographs, aerial photographs, geophysical and geochemical data, manuscripts and publications, and mineral locality information.

Recognizing the need to both preserve these valuable collections and improve the ability of staff and customers to search for, cross-reference, and access key information, DGMR implemented a long term data preservation plan in 2007. With support from the USGS NGGDPP, the Division is standardizing and consolidating key data collections into a digital archive named the Virginia Geologic Information Catalog (VGIC). Programming support for the VGIC provides the means to create feature-specific metadata records that are uploaded to the USGS National Digital Catalog, http://datapreservation.usgs.gov. To date, a total of 53,636 records have been given to the USGS.
DGMR Geological Core and Sample Repository
The DGMR Geological Core and Sample Repository contains a physical reference set of geologic materials that are maintained in accordance with storage and sampling policies to ensure long term preservation of the materials. Many of the specimens in the repository represent key index samples of geologic features in Virginia that have proven to be a valuable resource to those involved in geologic and historical research as well as mineral exploration and natural resources planning. The repository includes about 9,800 rock specimens, about 41,000 feet of drill core, well cuttings samples from about 7,400 oil, gas, and water wells, and about 750 fossil specimens.

UVA Rock, Mineral and Fossil Collection
In 2008, DGMR organized the transfer of a large collection of rock, mineral and fossil specimens from the University of Virginia - Department of Environmental Sciences to the DGMR Repository facility. This historic collection was at risk of imminent disposal or dispersal due to the lack of adequate storage facilities. The collection includes many valuable and irreplaceable geologic specimens collected in Virginia by UVA students and faculty, as well as staff from the Virginia Geological Survey (1908-1954), that were at one time displayed in the Lewis Brooks Hall of Natural Science that opened in 1877. Among the scarce records available for this collection are indications that the collection at one time also included specimens collected as part of the Lewis and Clark Expedition (1804-1806), donated by Thomas Jefferson to the University. Following the closure of the UVA Department of Geology in the 1960s, the collection was moved to various warehouse storage areas, where it was largely forgotten and inadequately preserved. Inventory records for the collection are incomplete and deteriorating rapidly. The total number of specimens in this collection is estimated to be over 15,000 individual samples. An inventory and initial catalog of the collection was initiated in FY 2010 with financial support from the USGS NGGDPP.

Data preservation breakout session discussion. Core racks and rock sample repository.
Breakout session - The future of energy development in the U.S.
Facilitator: Ramsay Barrett

Notes from flipchart

1. US migrates from major importer to exporter
2. Infrastructure pipeline (build out)
   a. Use Interstate system
3. Mechanisms of infrastructure
4. General public driven by money
   a. Education
   b. Incentives
5. Permitting issues as deterrents
   a. Public appeal
6. Energy choices and tradeoffs
   a. Consumer
   b. Environmental
   c. Quality
d. Availability  
e. Reliability  

7. Hydraulic fracturing  
   a. video (from geology.com)

b. Links to Ramsay Barrett’s Presentations  
   1 Barrett- Deep gas plays in PA  
   2 Barrett- The depositional setting of the Marcellus shale
COASTAL GEOLOGY and COASTAL ISSUES BRAKOUT

No notes were taken

DEVELOPING A CATALOG OF “GOOD OUTCROPS” FOR EDUCATORS

Notes coming soon