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FEDERAL GEOGRAPHIC DATA COMMITTEE

Theme Strategic Plan for Geology Theme

Department of the Interior Bureau of Ocean Energy Management and U.S. Geological Survey

Federal Geographic Data Committee (FGDC)

2017 – 2022

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Theme Strategic Plan for Geology

Theme Lead (Co-Leads): David Soller and Kumkum Ray

Theme Lead Agencies: USGS and BOEM

Executive Theme Champion: Thomas (Tod) Dabolt

Executive Champion Agency: Department of the Interior

NGDA Datasets in Geology:

Geology Theme NGDA Dataset	Dataset Manager Agency
USGS National Geologic Map Database Collection	USGS
Outer Continental Shelf Oil and Natural Gas Wells - Pacific OCS Region NAD 83	BOEM
Outer Continental Shelf Oil and Natural Gas Wells- Gulf of Mexico Region NAD 27	BOEM
Outer Continental Shelf Oil and Natural Gas Wells- Alaska Region NAD 83	BOEM
Seismic Water Bottom Anomalies - Gulf of Mexico NAD27	BOEM
Federal Sand and Gravel Borrow Areas - Atlantic (Lease Areas)	BOEM

Goal 1: Formulate strategies to improve the management the datasets as needed within the Geology Theme.

Objective 1.1 Maintain and update datasets in the Geology Theme.

Anticipated Outcomes
- Facilitate the sharing of the Theme's geospatial data, ensure the effective development of the Theme's NGDA Datasets, and convene leadership of the Theme's geospatial community.
- Establish the standards of achievement in terms of a proportionate improvement in the existing condition.

Actions 1.1.1 USGS: Provide geographically-referenced geologic maps and data, both onshore and offshore.

Actions 1.1.2 BOEM: Continuous updates with needed modifications for geologic work:

- 1.1.2.a Provide distribution of OCS well data;
- 1.1.2.b Provide seismic water bottom anomalies in the Gulf of Mexico; and
- 1.1.2.c Provide information on Federal OCS sand and gravel borrow areas – GOMR and Atlantic; Pacific to be included in the near future (lease areas).

Goal 2: Coordinate as necessary with State Geologists, State agencies, academia for offshore sand resource needs and collaboration with USACE, USGS and NOAA on offshore geophysical and geological collection needs.

Objective 2.1 Facilitate Sand Management Working Groups for offshore sand resource needs.

Anticipated Outcome: Sand resources made available for beach nourishment projects.

Actions 2.1.1 BOEM (Marine Minerals): Complete dataset creation workflow by 2017.

Actions 2.1.2 BOEM (Marine Minerals): Complete internal guidance document for coordination/collaboration processes by 2017.

Actions 2.1.3 BOEM (Marine Minerals): Fine tune [current ad hoc] process whereby Marine Minerals builds the data set and then provides to the Marine Cadastre team for upload for public access; build an application programming interface in 2017/2018.

External Factors, Challenges, and Opportunities

External Factors:

- Accelerating increase in the amount of digital information.
- Dataset life cycle.
- Need for long-term preservation of digital information.

Challenges:

- Geospatial datasets often have a time dimension.
- Geospatial datasets often have no metadata associated with them.
- Datasets generated by Earth satellite sensor systems grow at rates up to terabytes per day, often for years. In addition, satellite data is not a primary source for marine minerals; acoustic sensor systems would be better.
- Need to begin archiving before they are "finished" (while new information is still being added).
- Some datasets may continue growing for longer than an archive's optimum technology refresh period.
- Costly; funds need to be budgeted over a long period of time.
- Seismic data needed to map bottom features is limited in terms of resolution and spatial extent.

Opportunities:

- Preserve historical geospatial data given the extensive and vital role it plays in scientific, government, and legal communities.
- Preserve geospatial data on a national scale and make it available to future generations.
- Utilize a generic architecture to provide a fallback strategy that guards against irreplaceable loss of information.