

E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

These notes accompany the EFA 3.2 version of the project and are designed to help users get started with the ArcGIS project. Sponsors can download the project from the sponsor's area of the EFA Website (<http://www.efafrica.com/sponsors.php>). The project is zipped (EFA_V3_2.zip) and will need to be extracted (please ensure that the original directory structure is preserved). If the project is viewed in ESRI ArcCatalog users will see that it consists of a number of directories. Some contain data e.g., Seismic_sections and Burial_History. Other directories contain an ESRI Geodatabase, associated layer files and image files (mostly ESRI Grids). There is also an ArcMap file (africa_mxd) which contains all the various layers and another mxd called EFA_Basins which contains data related to African basins. Users can also try out a number of layers in Google Earth. A number of preliminary Google Earth kmz files can be found within the Google Earth directory. Layered pdf files are also available in the sample_pdf_maps folder.

E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

WHAT'S NEW IN VERSION 3.2

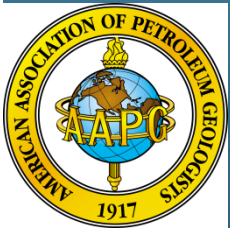
- REVISED BASIN LOCATIONS**
- REVISED BASIN AGES**
- REVISED BASIN CLASSIFICATION (KINGSTON)**
- REVISED SEDIMENT THICKNESS**
- REVISED DEPTH-TO-BASEMENT**

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THE EFA TEAM

The technical members of the team have wide experience of oil and gas exploration in Africa and are all providing their services on a *pro bono* basis

Peter Wigley Technical Coordinator
Roger Bignell Technical Contributor
David Boote Technical Contributor
Peter Dolan Technical Contributor
Bill Dickson Technical Advisor
Al Danforth Technical Advisor
Mark Odegard Gravity-Magnetics
Duncan Macgregor Peer Review
Vesna Vokins Sponsorship
Christine Purdy AFRICA NOW



Additional data providers

The EFA team gratefully acknowledge the contribution of additional data from the these companies and organisations



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Exploration GIS Sponsorship

The EFA project is sponsored by a number of companies with interest in Africa. Financial contributions from sponsors are being used to prepare the Exploration GIS, the Interactive Internet map, hardcopy maps and other digital output which will be published by AAPG. In return sponsors will have unrestricted use the GIS, all hardcopy and digital products. Access to the GIS is only available to sponsors. This final GIS will be completed during March 2012, prior to that time a number of beta versions and other digital files will be available for download via the sponsor area on this web site. EFA sponsorship is still available to new companies and organisations.

The EFA Team gratefully acknowledges the sponsorship and support of the following companies and organisations:

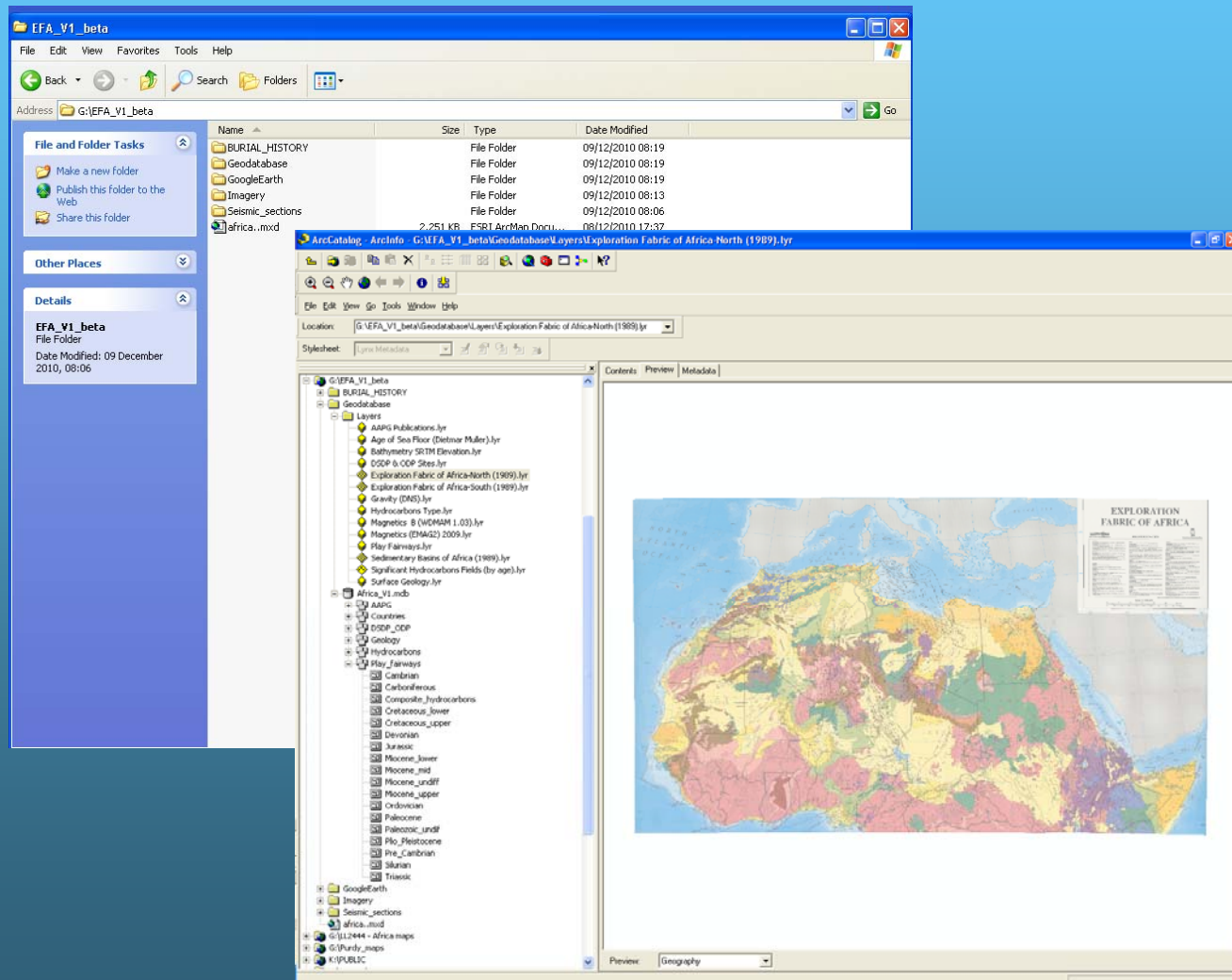
AAPG, Afren, BHP, BP, CGG Veritas, Chevron, Faroe Petroleum, Fugro, The Geological Society, Hanno Resources, Hess, HRT Canada, ION, Lynx, Maersk, Marathon, Moyes & Co, Murphy, Nexen, Nippon, Ophir, PGS, Rift Energy, RWE, Sapetro, Sasol, Shell, Serica, Sipetrol, Statoil, Svenska, TGS, The Geological Society, Total, and Tullow

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CHARITABLE DONATION TO AFRICA NOW (NOW PART OF SELF HELP AFRICA)



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 ARCGIS PROJECT

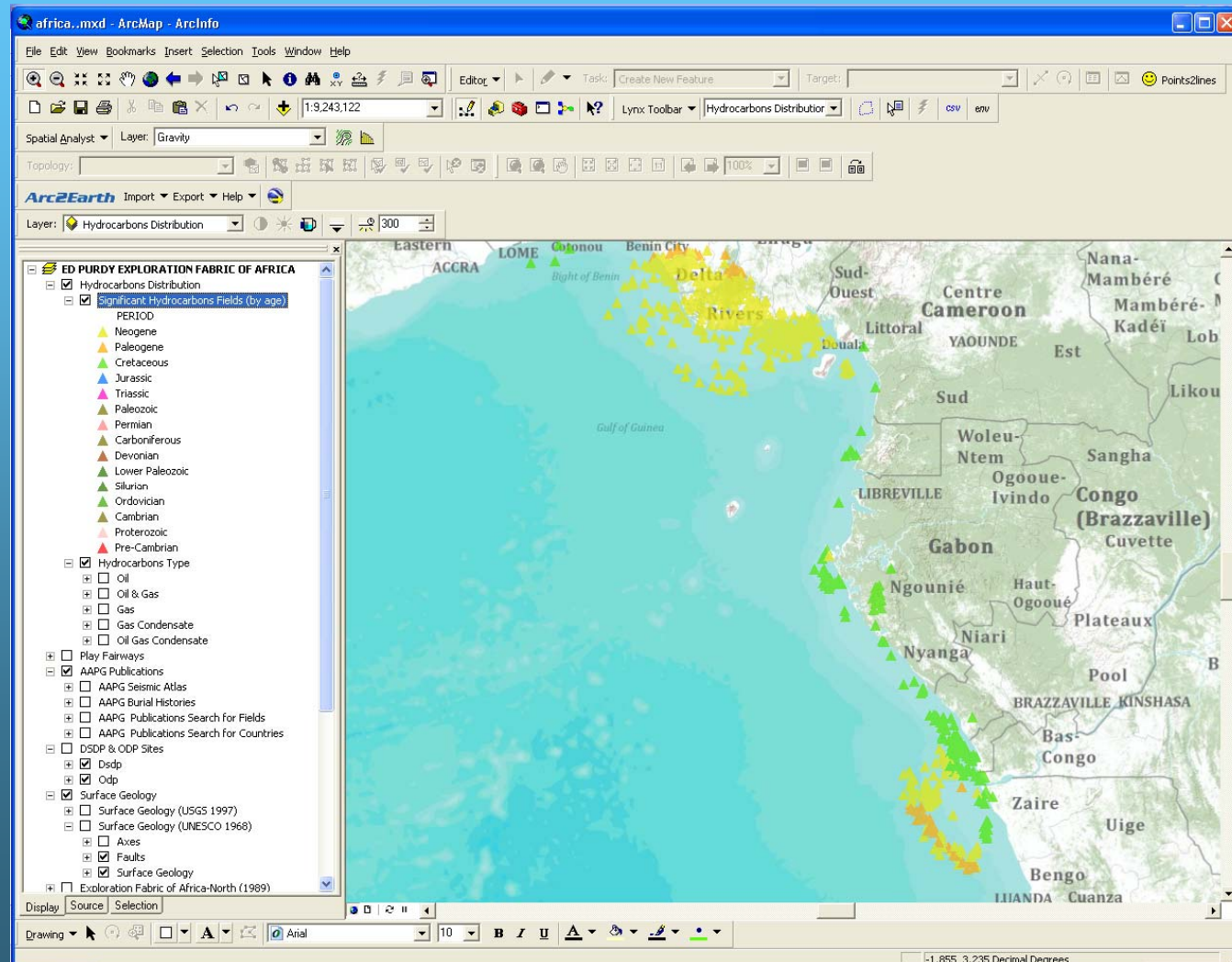


E G PURDY EXPLORATION FABRIC OF AFRICA

FINAL GIS VERSION EFA V3.2

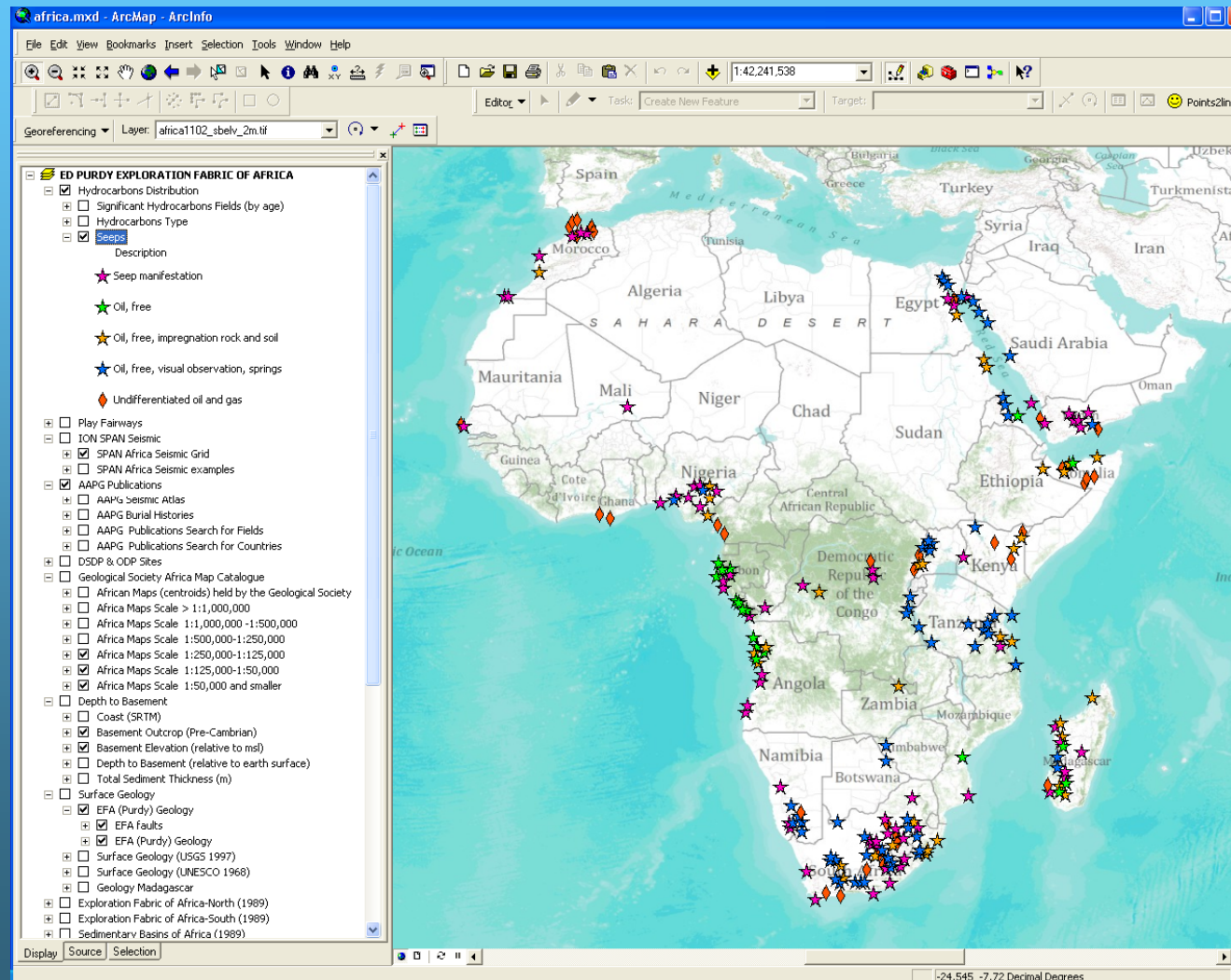
The following series of slides show the various layers in the project starting with the distribution of hydrocarbons fields (shown by age). The field locations have some basic attributes including field name, hydrocarbon type, chronostratigraphic and lithostratigraphic information. The hydrocarbon types layer has been constructed by creating a 10 km buffer around known hydrocarbons. These buffers have then been merged where they overlap and then smoothed. The various play fairway layers show information at a very preliminary stage. Currently they show the distribution of hydrocarbons according to age and have been created using the same technique as described for hydrocarbons type. In future versions this basic play fairway data will be supplemented with additional facies and source rock information

FIELD DISTRIBUTION

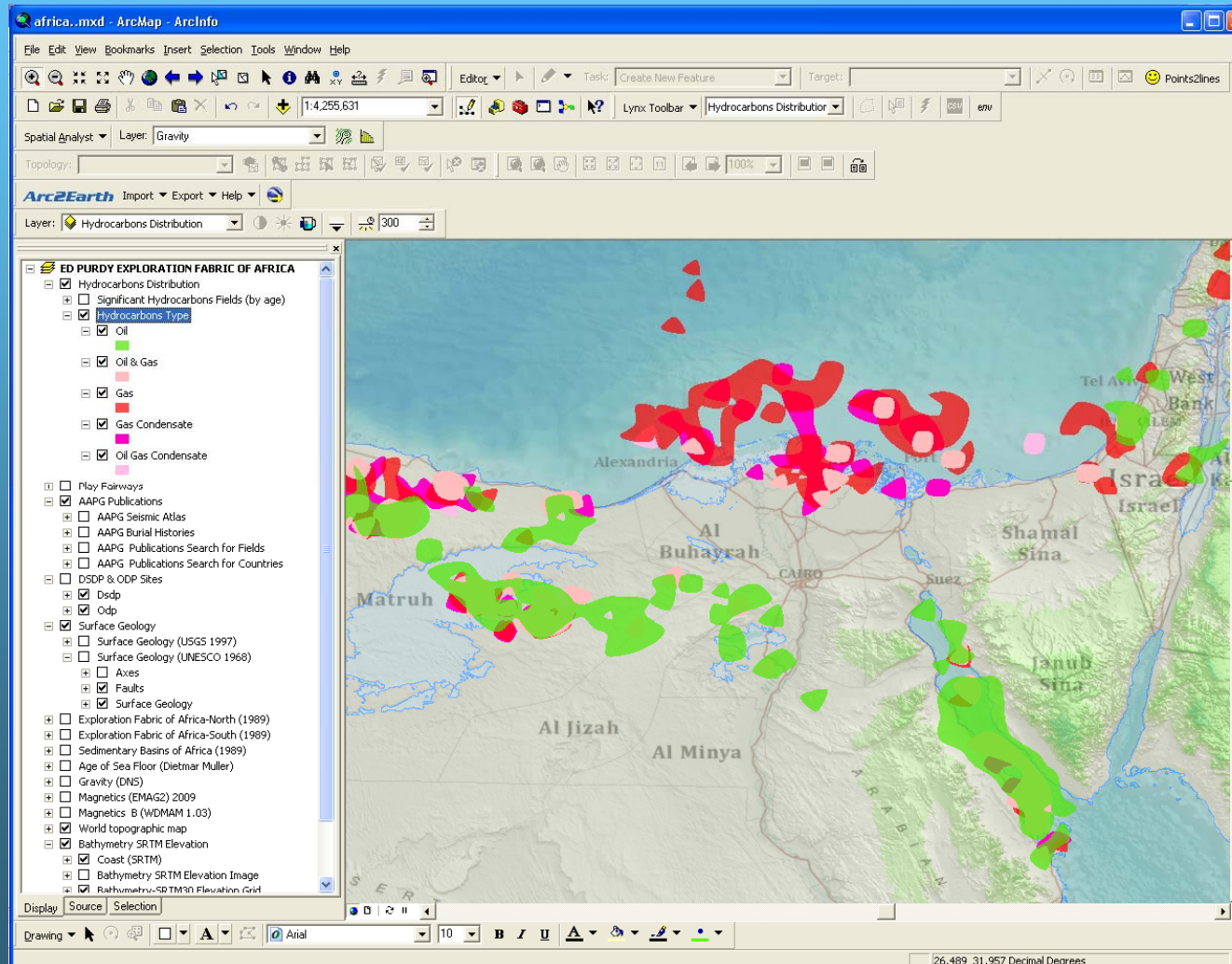


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SEEPS



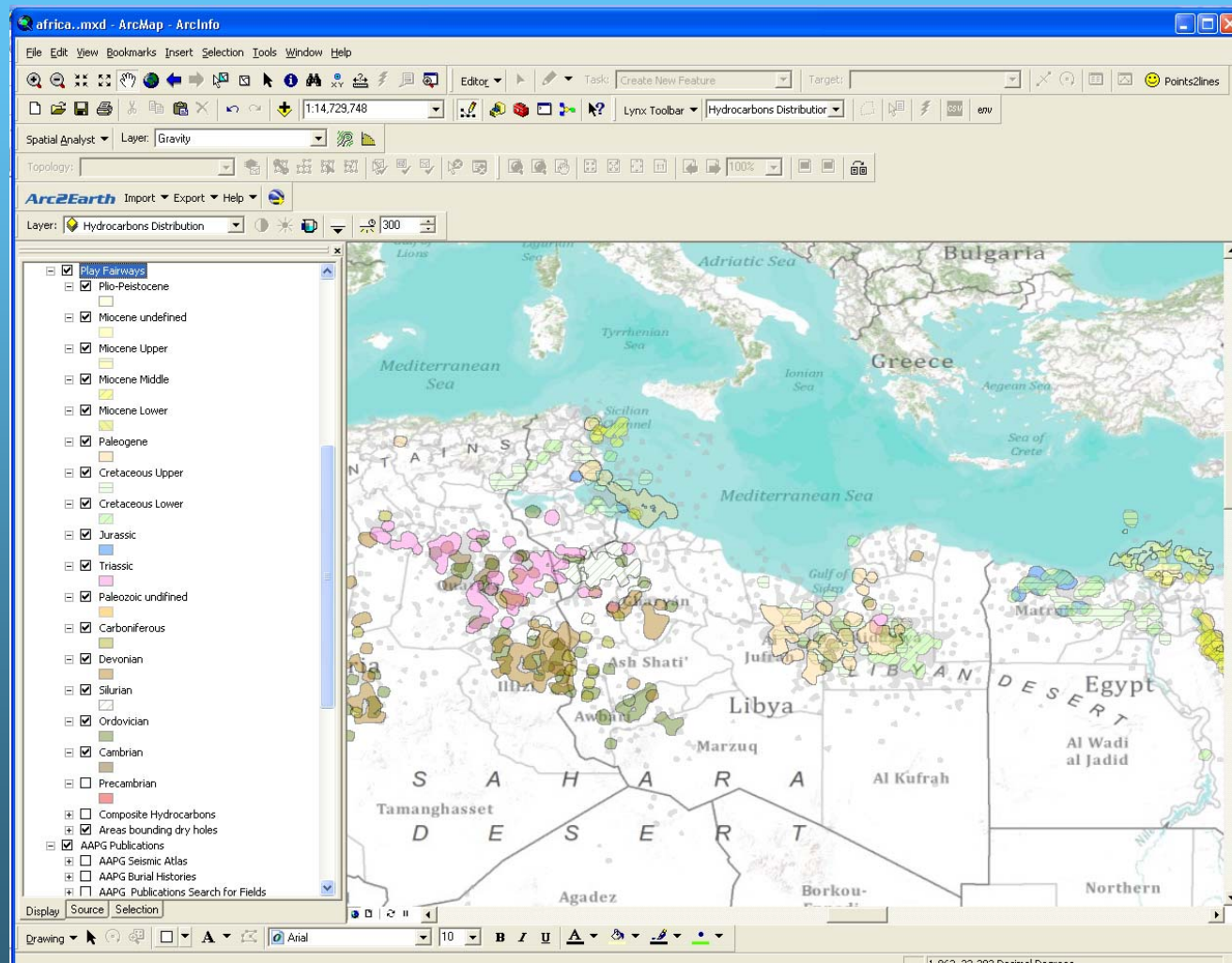
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 HYDROCARBONS TYPE



E G PURDY EXPLORATION FABRIC OF AFRICA

FINAL GIS VERSION EFA V3.2

PLAY FAIRWAYS



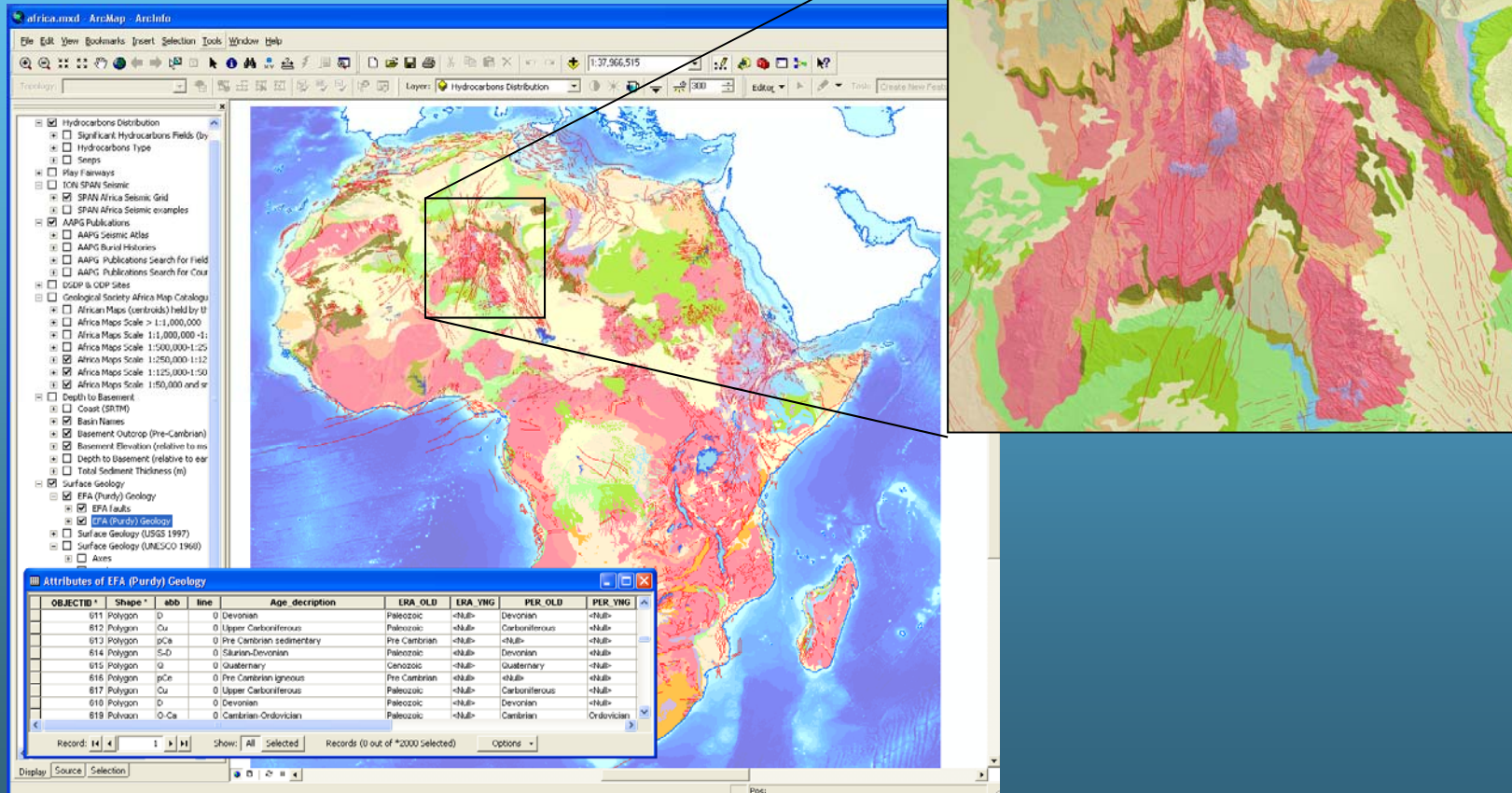
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

DIGITAL GEOLOGY OF AFRICA

There are currently three digital geology datasets for Africa included in the project, these are the E.G. Purdy 1989 Exploration Fabric of Africa data (now fully vectorised and attributed) USGS 1997 data and a digital geological dataset derived from the 1968 UNESCO maps of Africa. These data contain polygon topologies which shows the outcrop geology and each polygon has been attributed with both chronostratigraphic and lithostratigraphic information. In addition certain elements (faults and sediment thickness) have been included from the CGMW Tectonic map of Africa (2010) The original 1989 Exploration Fabric of Africa and African Basins map images have been georectified and included in the project for reference purposes. Image data showing the age of the sea floor around Africa derived from Dietmar Mullers's work is also included.

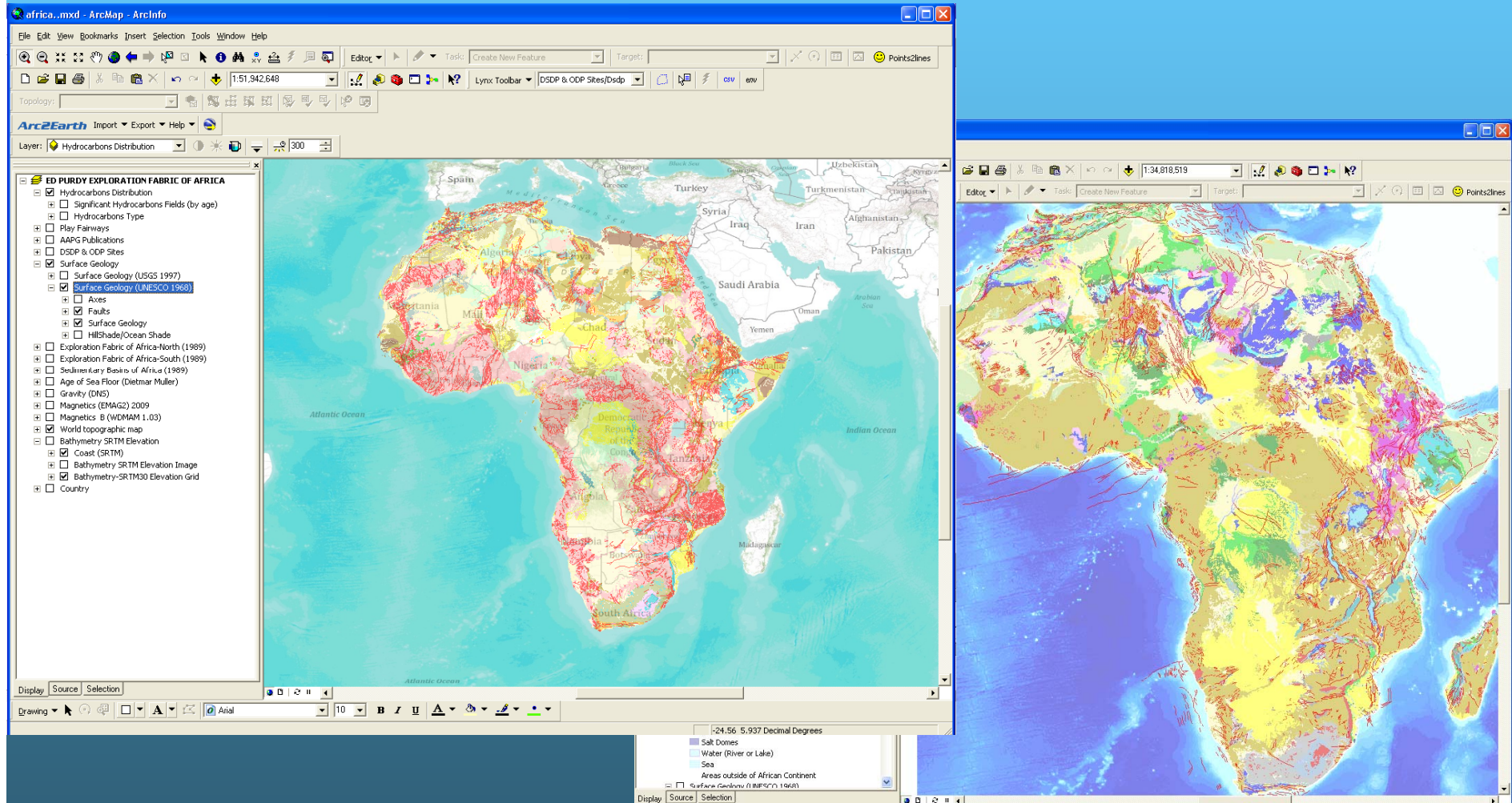
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

EG PURDY DIGITAL GEOLOGY OF AFRICA



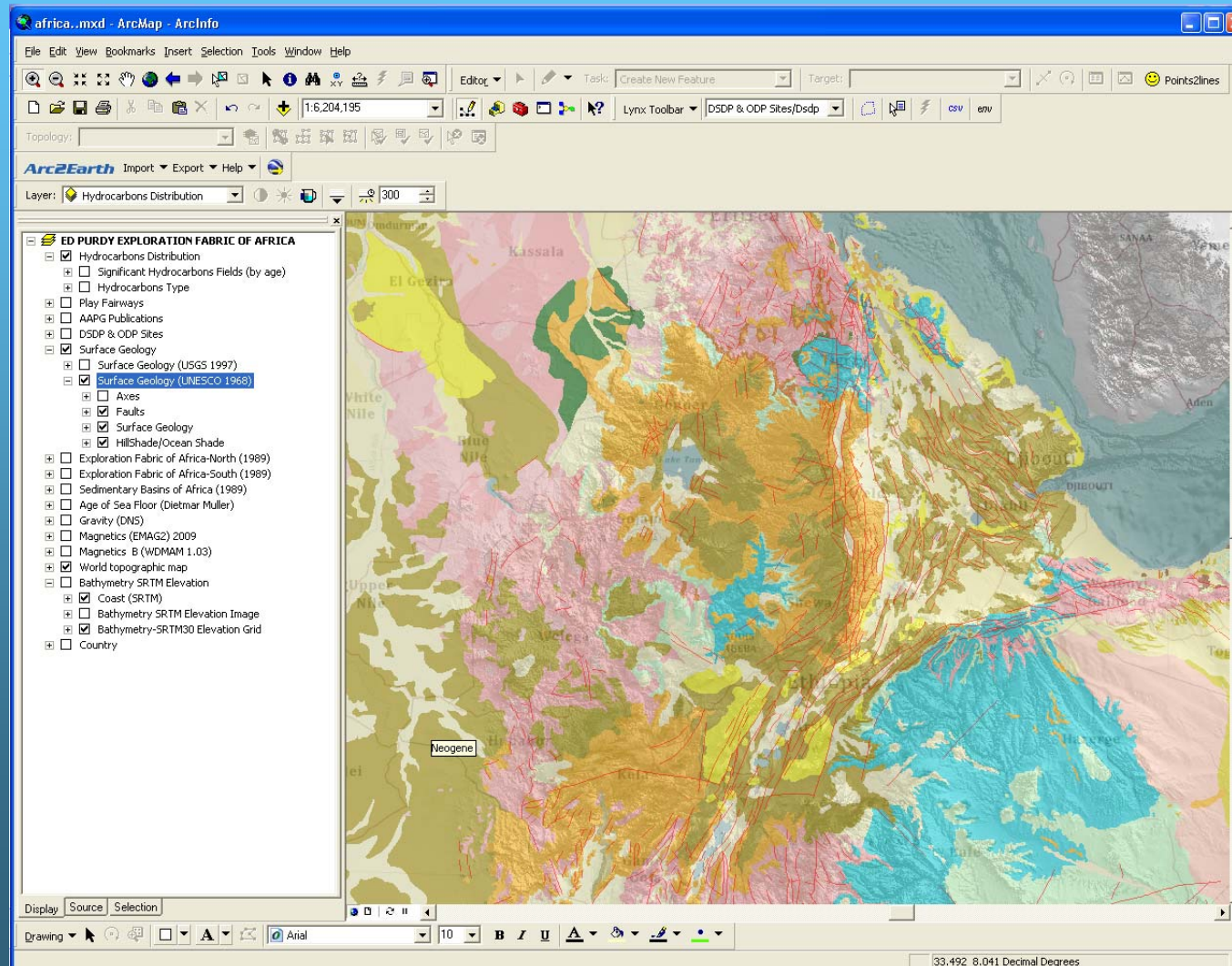
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UNESCO & USGS DIGITAL GEOLOGY OF AFRICA

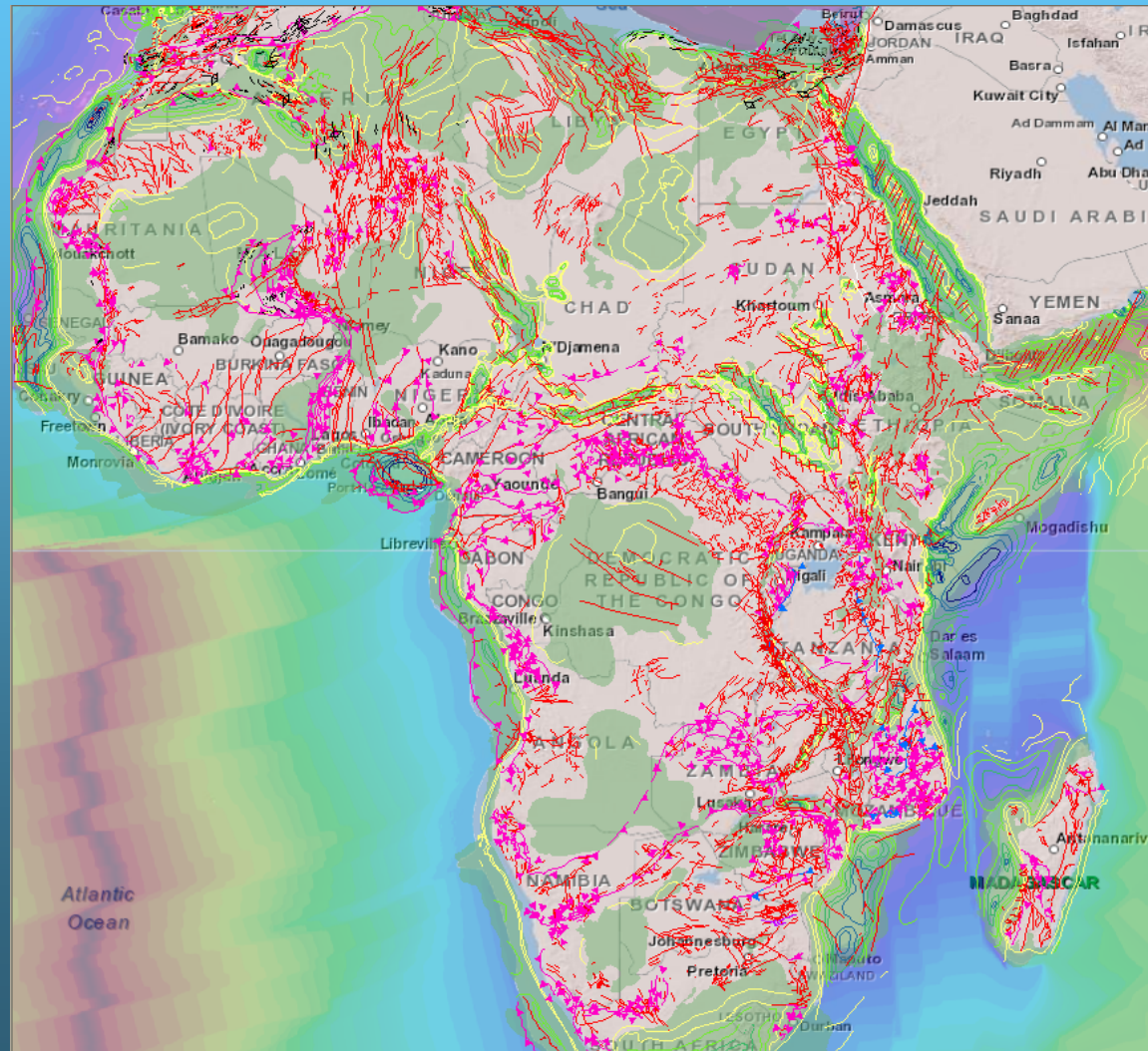


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DIGITAL GEOLOGY OF AFRICA WITH RELIEF SHADE

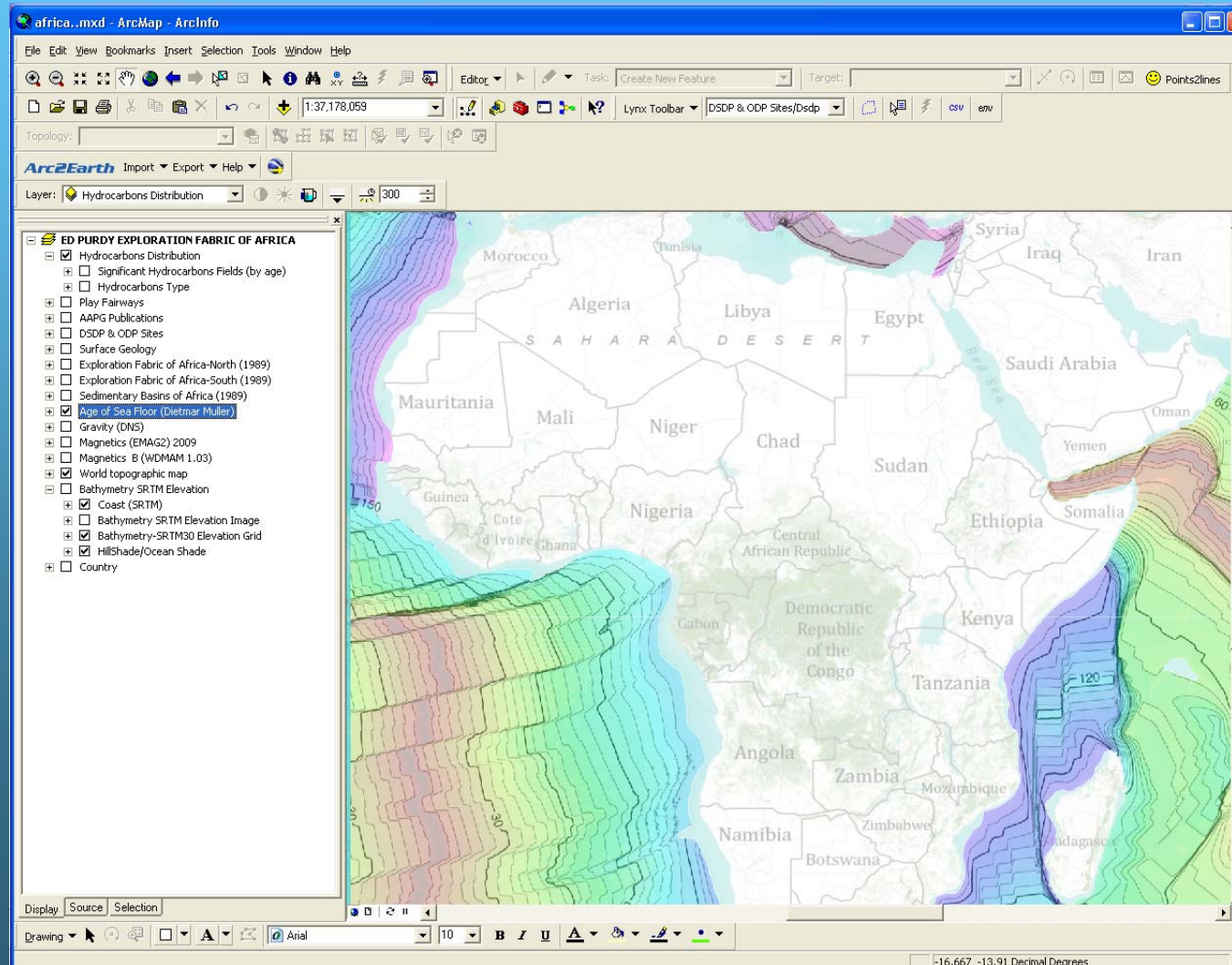


**Tectonic Framework and Sediment thickness modified
from Tectonic Map of Africa - CGMW (2010)**



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AGE OF SEA FLOOR (DIETMAR MULLER)



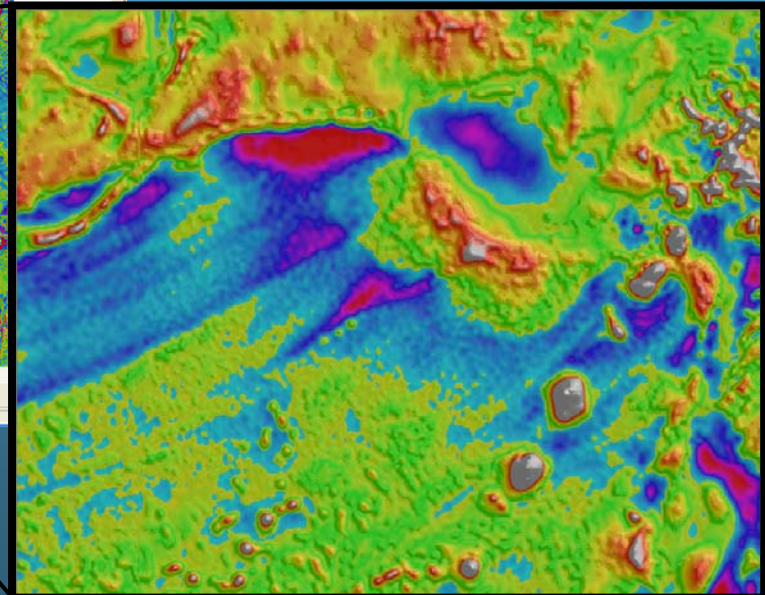
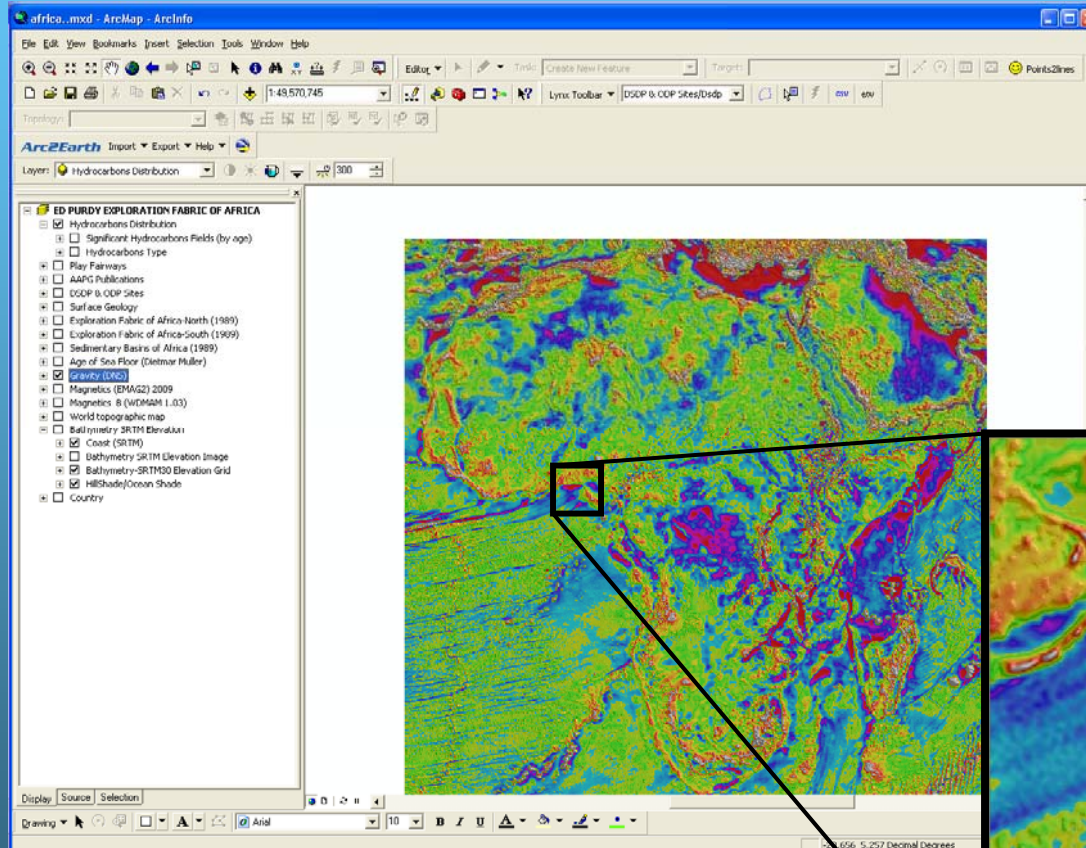
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REMOTE SENSING DATA

Three remote sensing datasets (one gravity and two magnetics) have been converted from the original released ascii to ESRI grid format. Shade grids are provided for each of these layers in order to give an enhanced 3D effect. Other grids have been prepared to show bathymetry (based on Gebco data) and relief from SRTM 90m data. These datasets have now been reprocessed by Mark Odegard and new Free Air, Bouguer and Isostatic Gravity layers are now included.

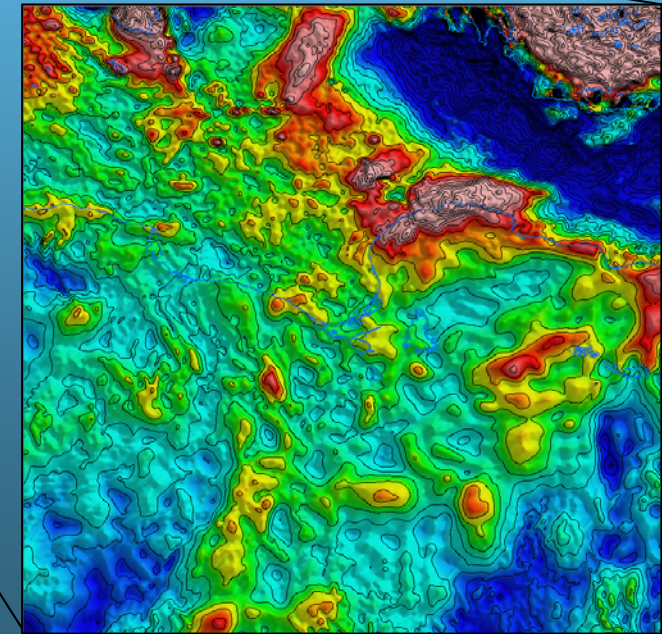
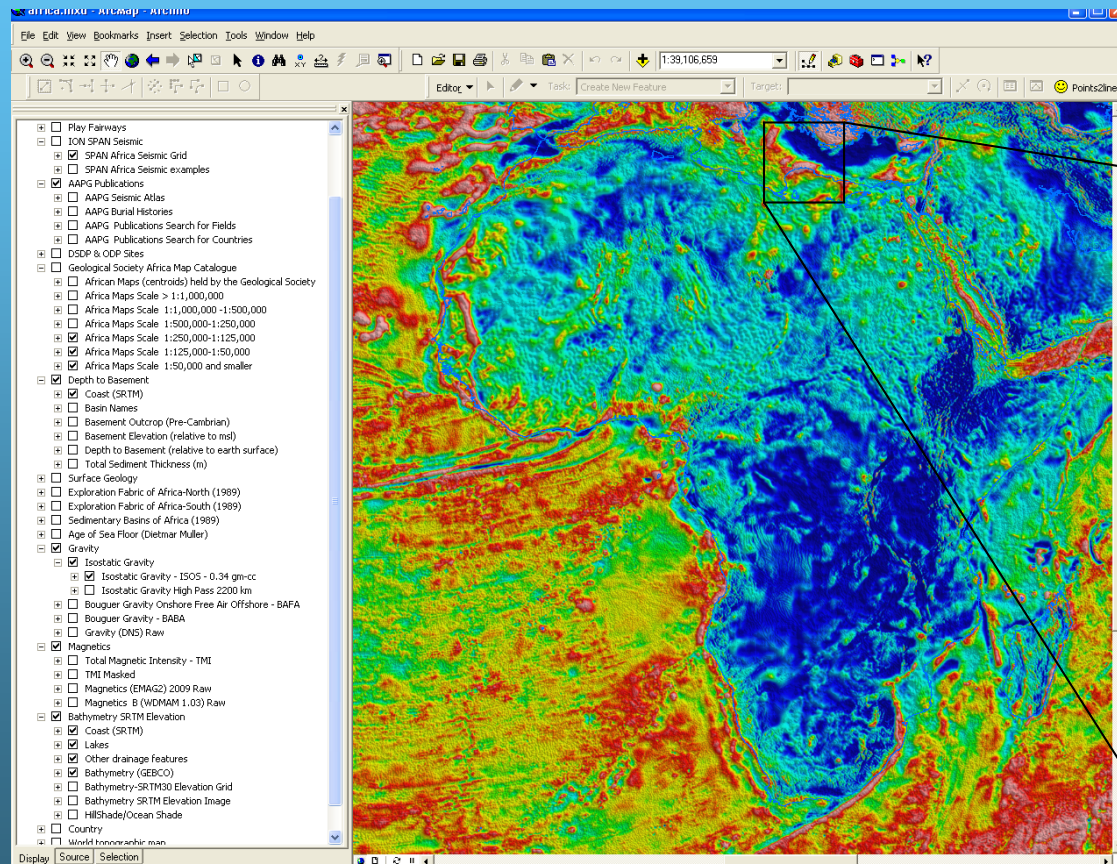
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GRAVITY (DANISH NATIONAL SPACE AGENCY) RAW



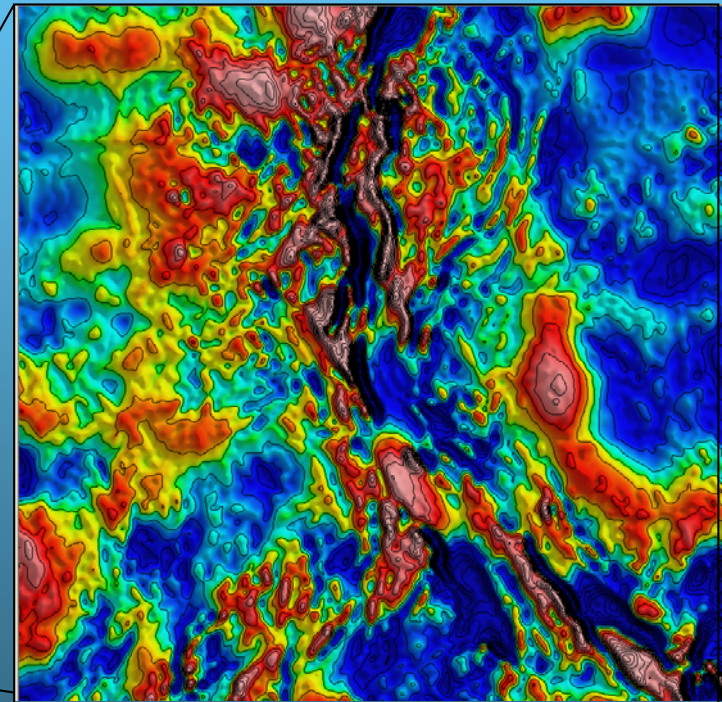
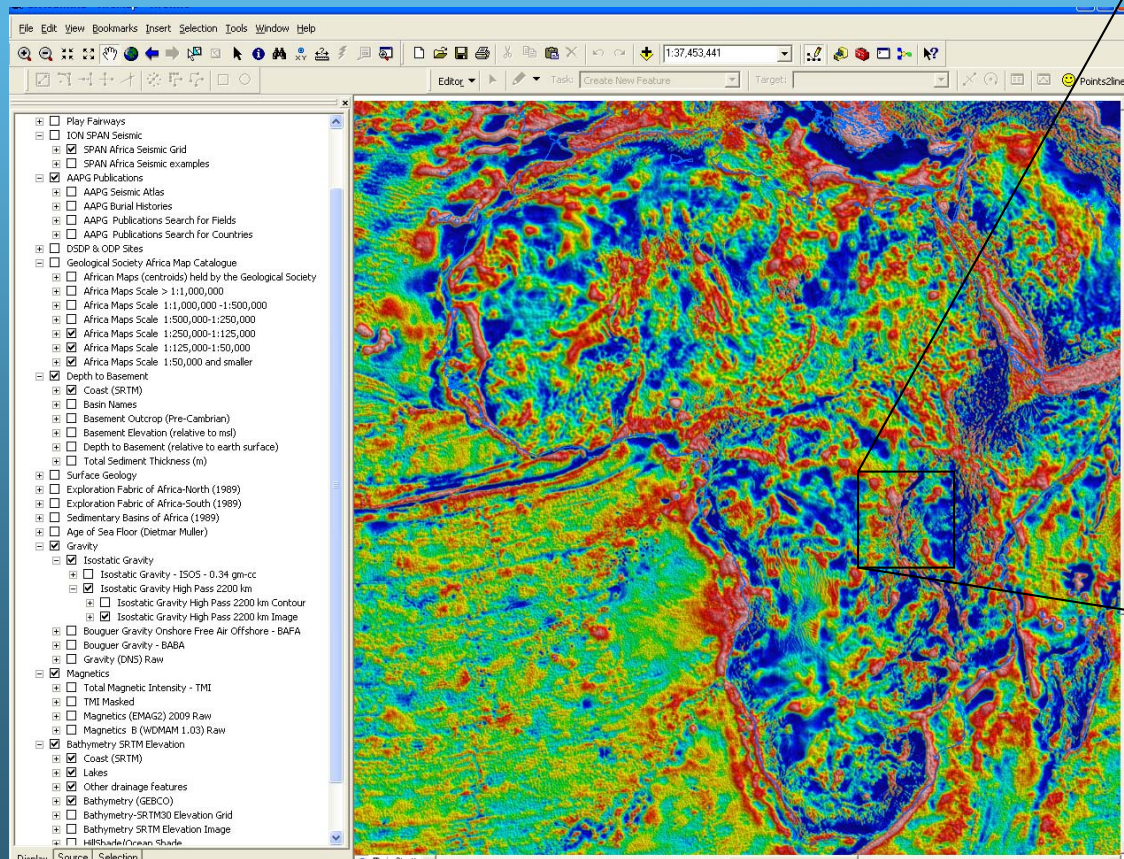
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

ISOSTATIC GRAVITY (ISOC 0.34 gm/cc)



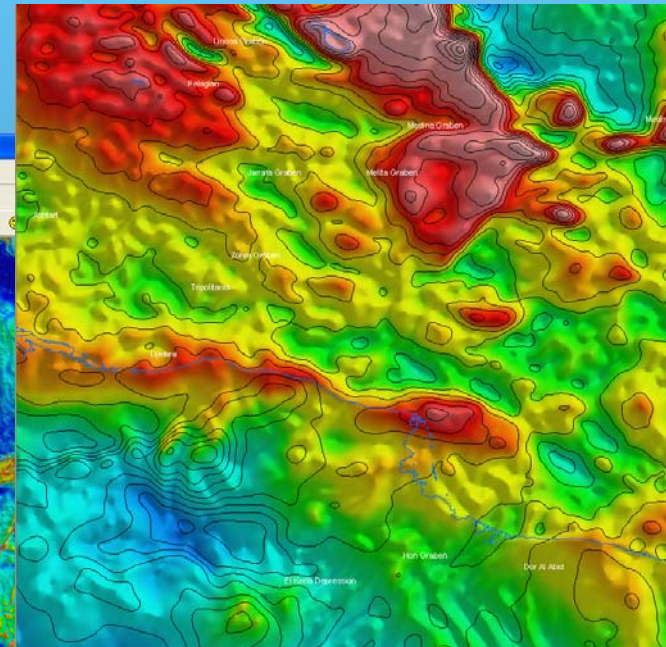
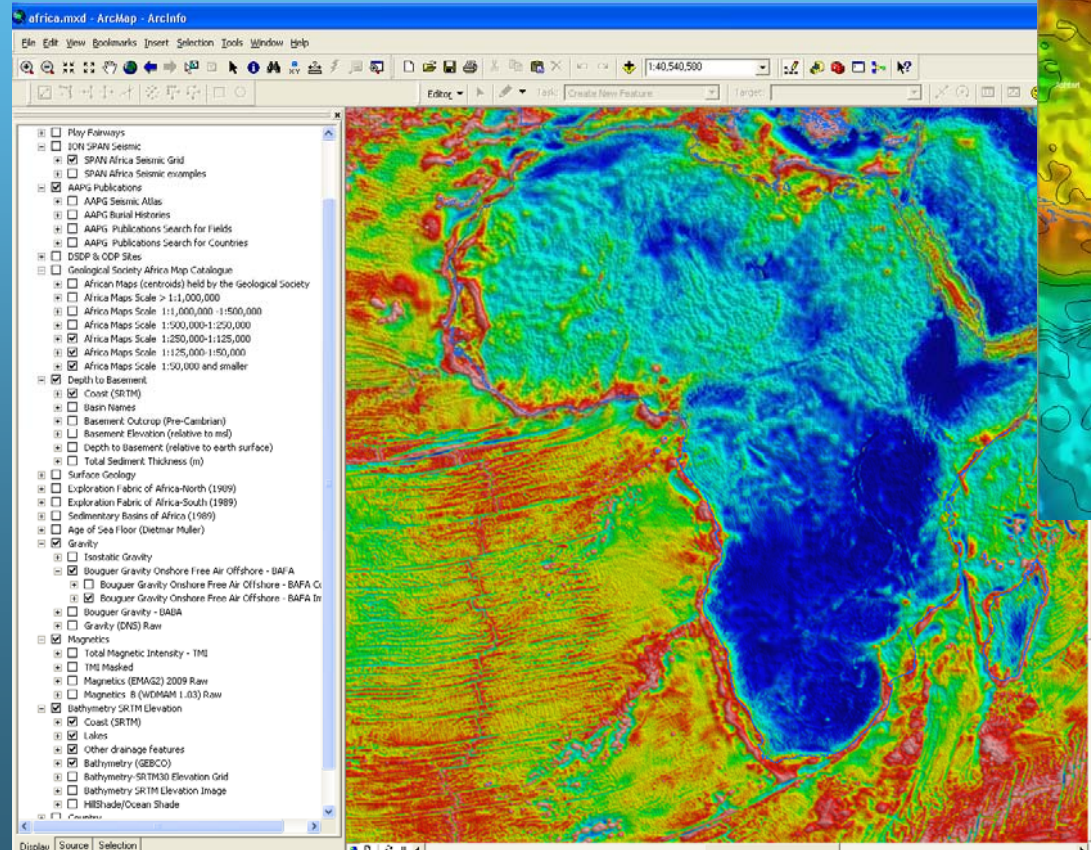
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ISOSTATIC GRAVITY (HIGH PASS 2200 km)



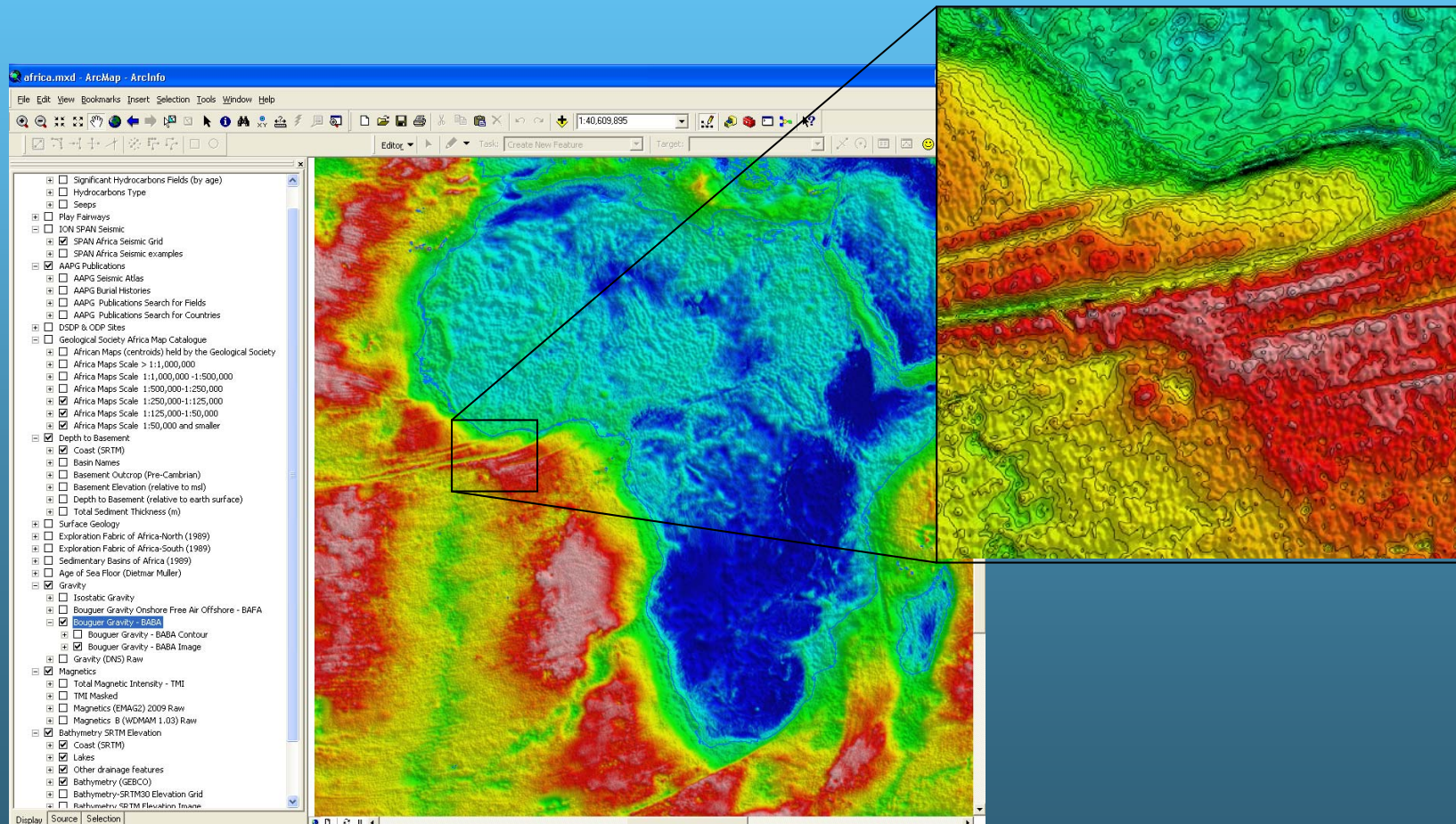
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Bouguer Gravity Onshore Free Air Offshore - BAFA



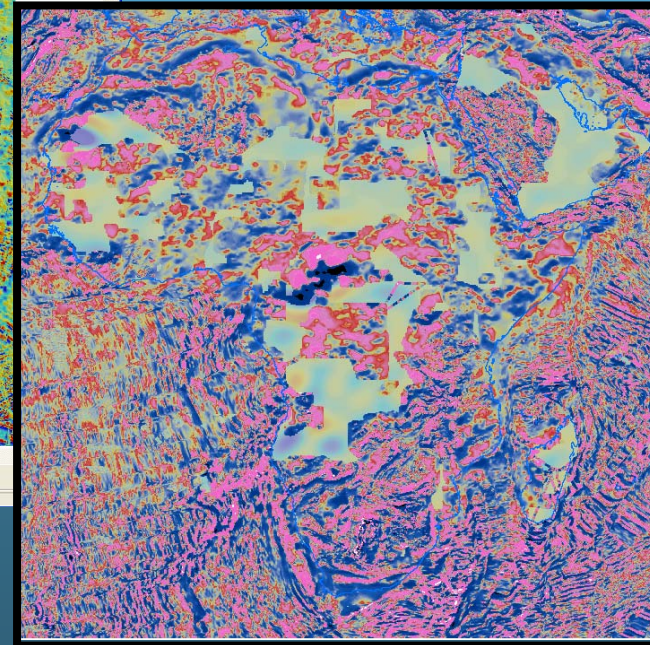
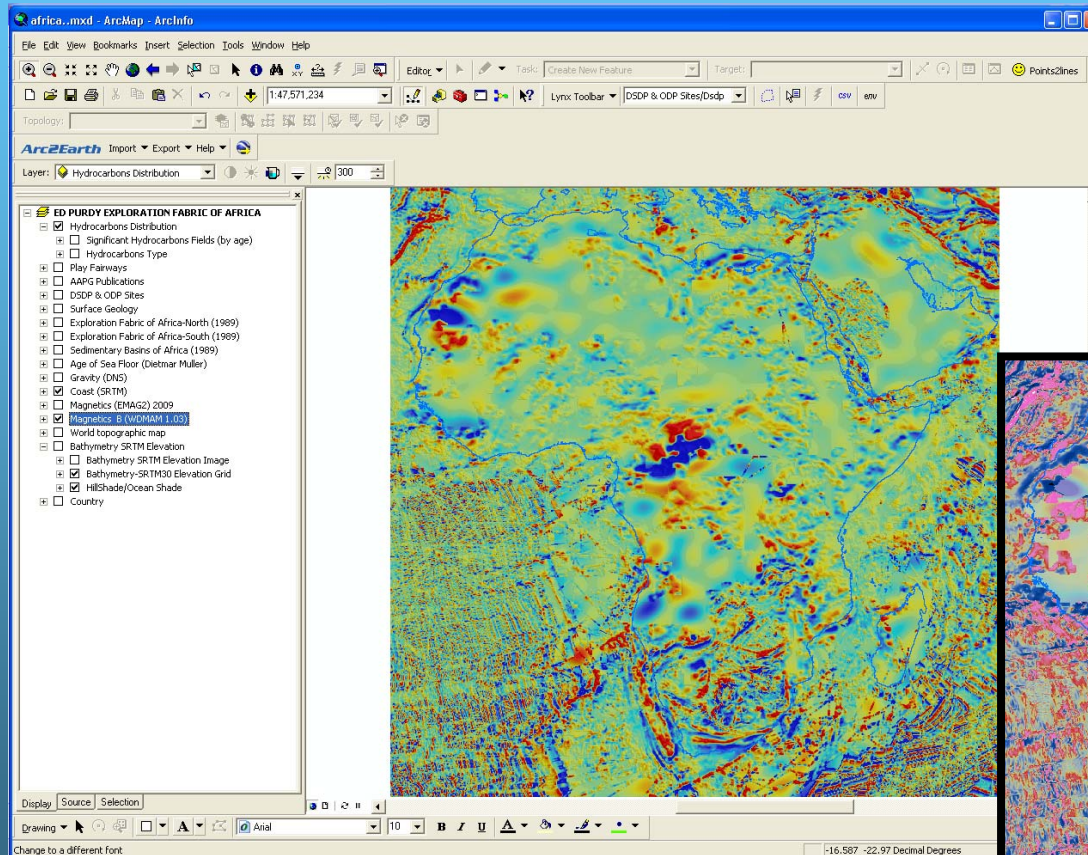
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Bouguer Gravity - BABA



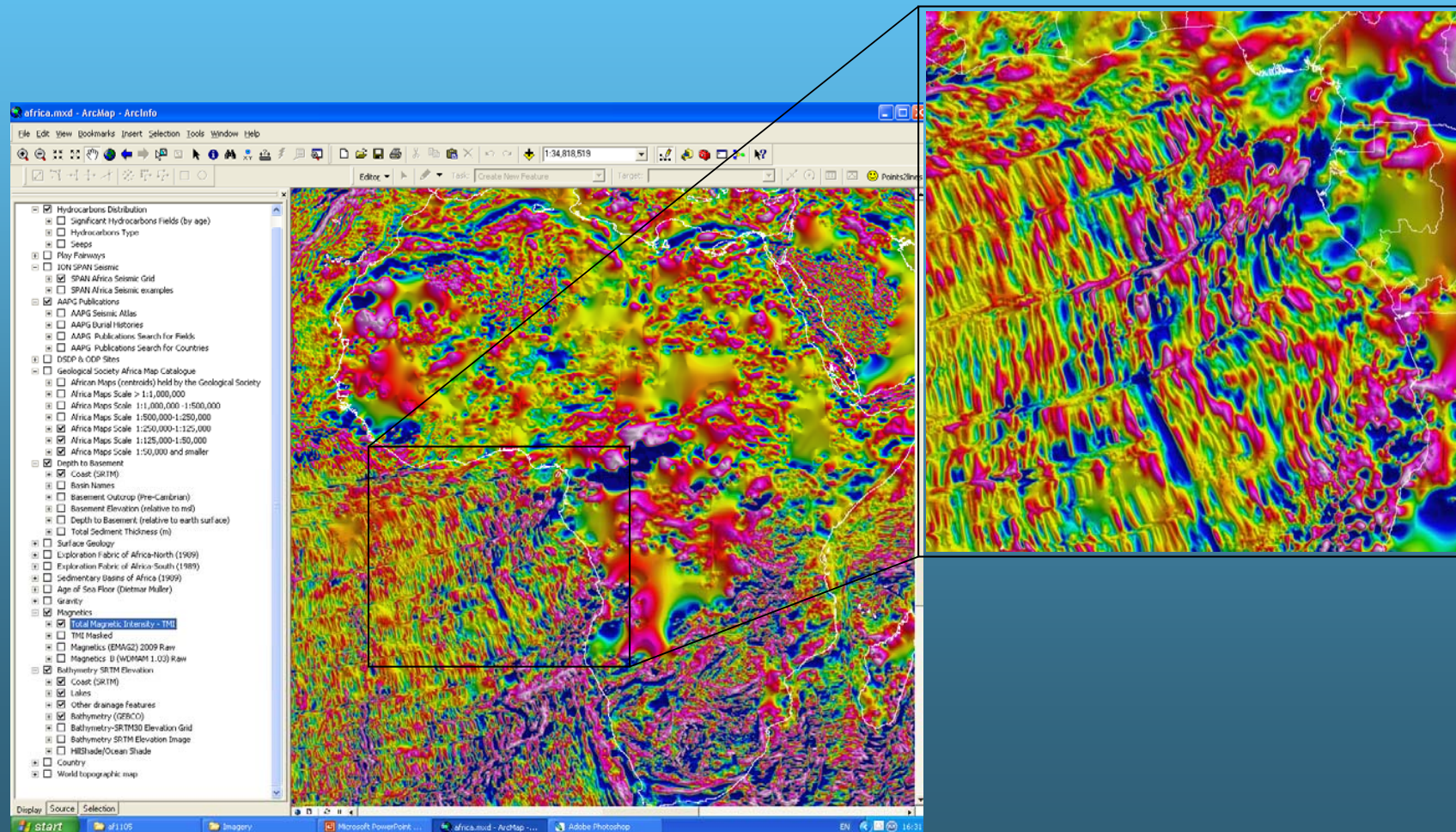
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MAGNETICS (WDMAM 2007 AND EMAG2 2009) RAW



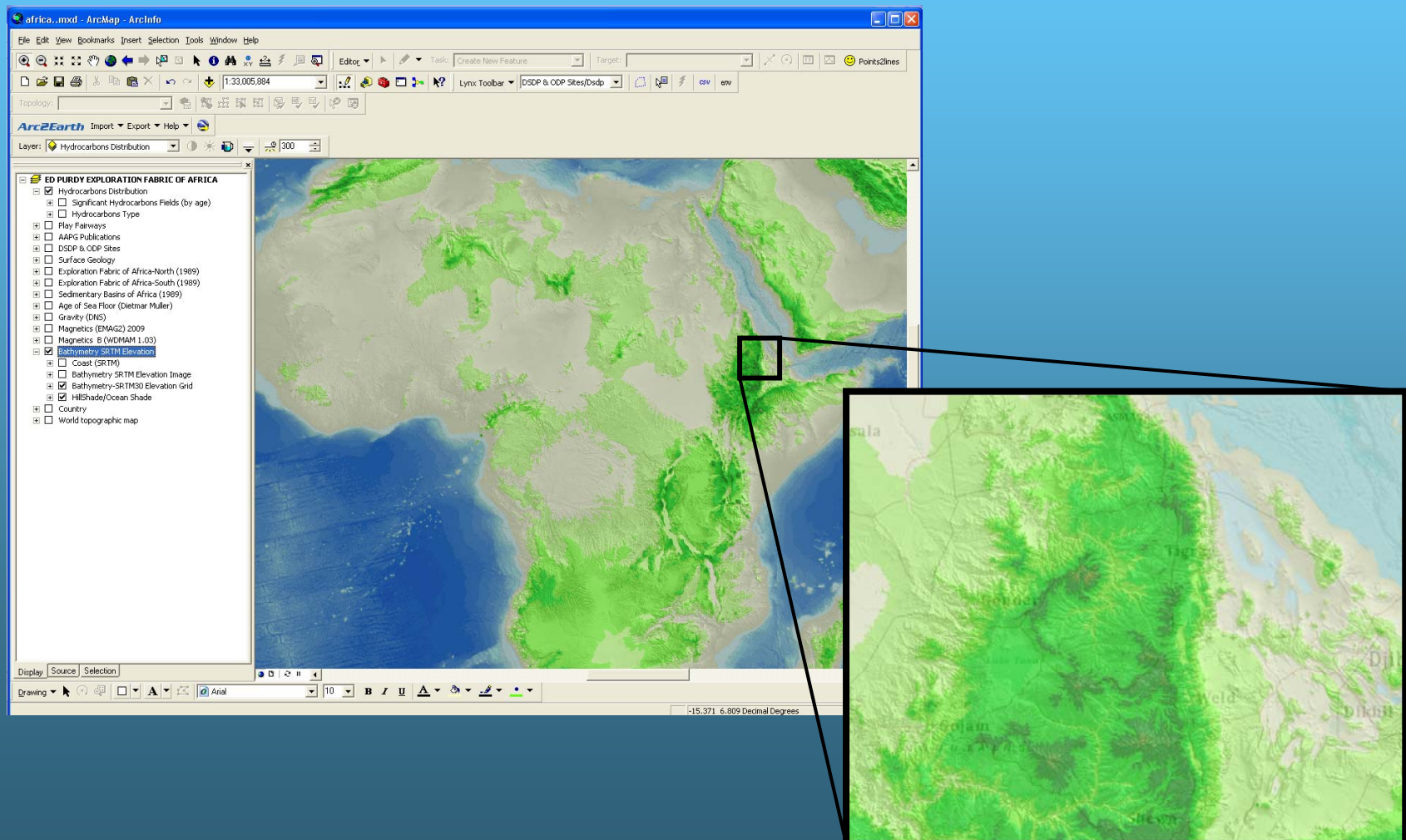
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REPROCESSED MAGNETICS - TMI



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SRTM ELEVATION AND GEBCO BATHYMETRY



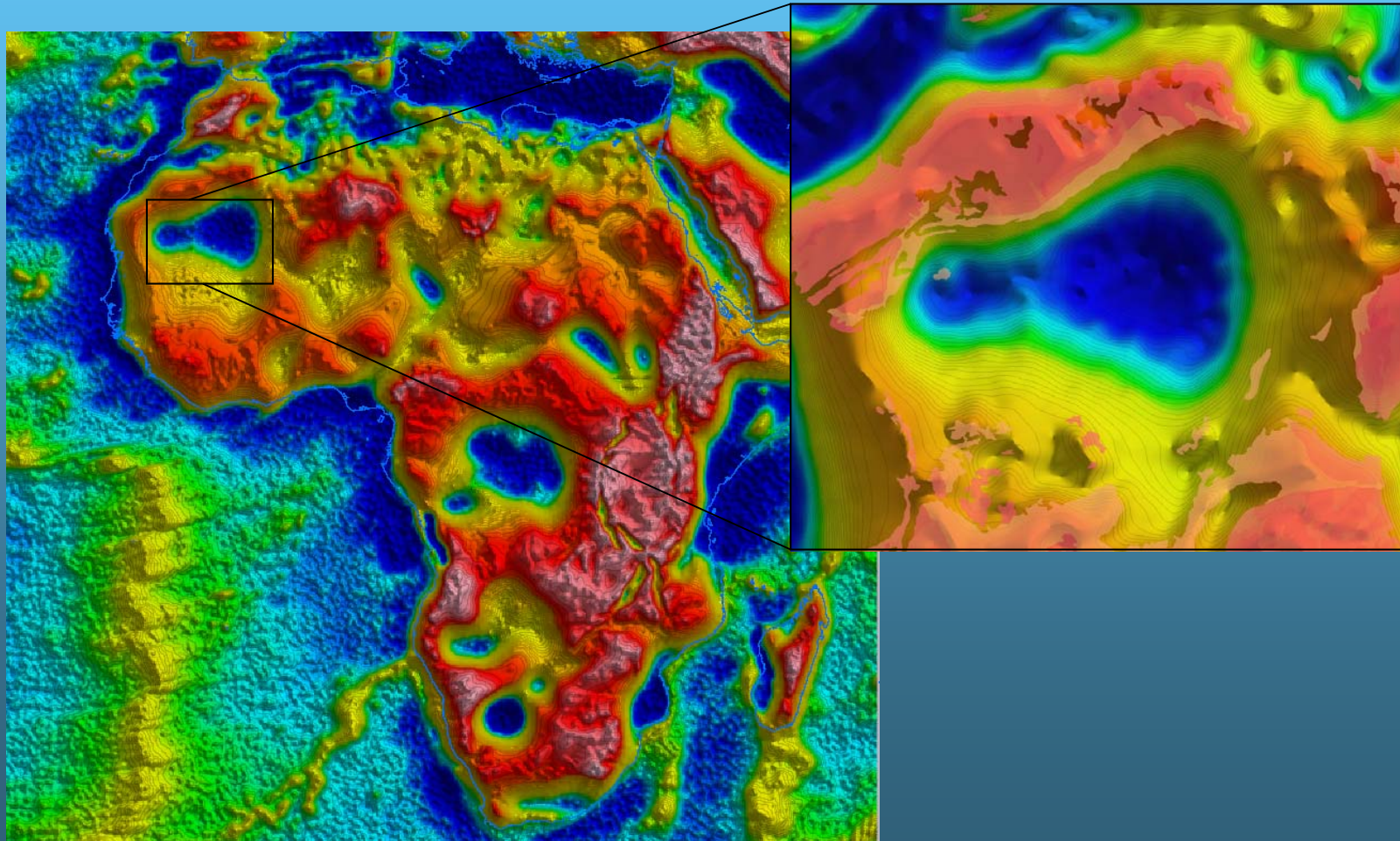
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DEPTH-TO-BASEMENT

Depth to Basement and Total Sediment thickness maps have been prepared by Mark Odegard. They are based on the DNS Gravity and EMAG2 Magnetics. These inversions have been calibrated to a variety of G&G data (wells, seismic etc). In the East African rift the inversion technique used did not sufficiently resolve the depth to basement. For the EARS a series of grids have been included derived solely from published information. In Version 3.2 Mark has integrated these grids into the Depth-Basement and Total Sediment thickness layers

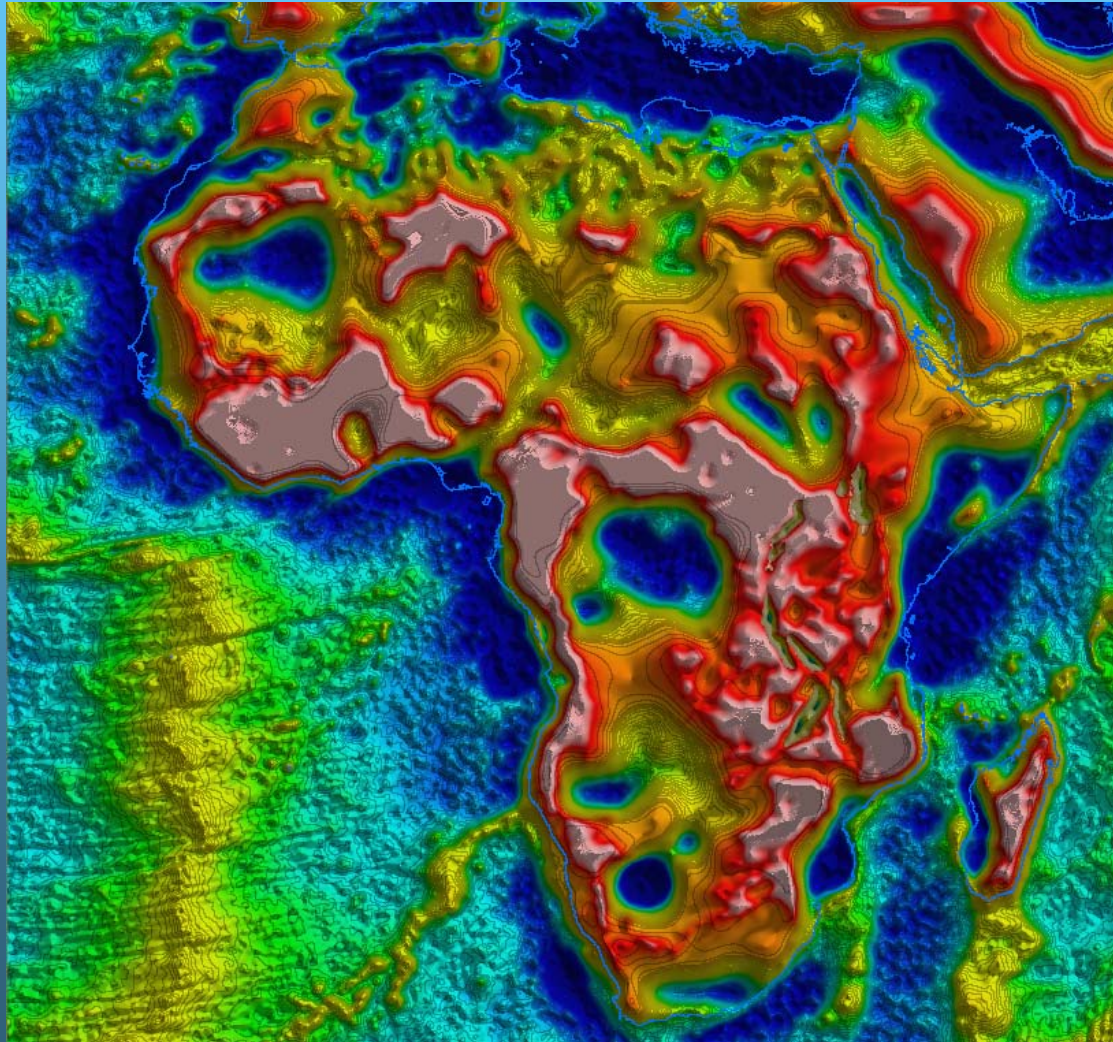
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BASEMENT ELEVATION (MSL) GRAVITY/MAG INVERSION



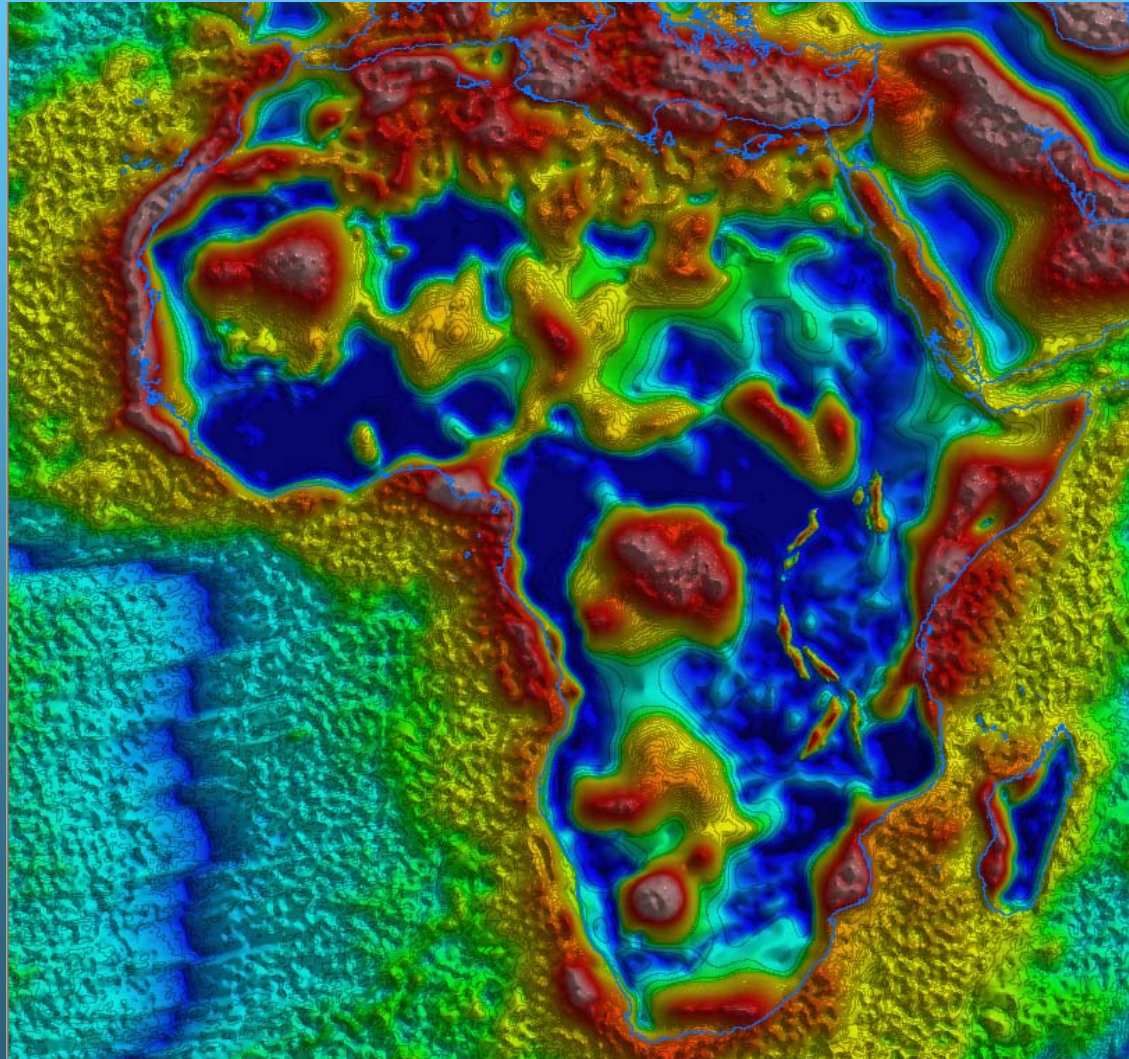
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DEPTH-TO-BASEMENT GRAVITY/MAG INVERSION



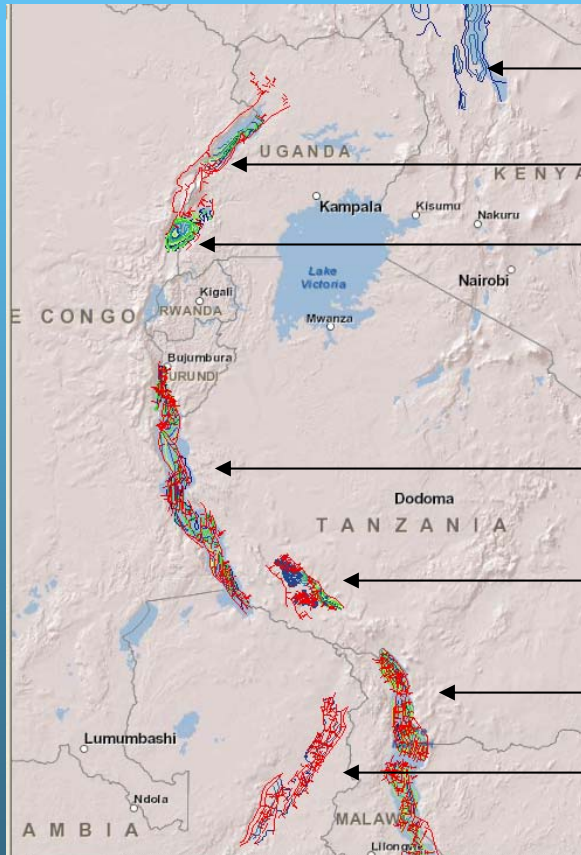
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TOTAL SEDIMENT THICKNESS GRAVITY/MAG INVERSION



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DEPTH-TO-BASEMENT EARS



CGMW Tectonic Map of Africa (2010)

Upcott et al (1996)

Dominion Petroleum (2011)

Sander and Rosendhal (1989)

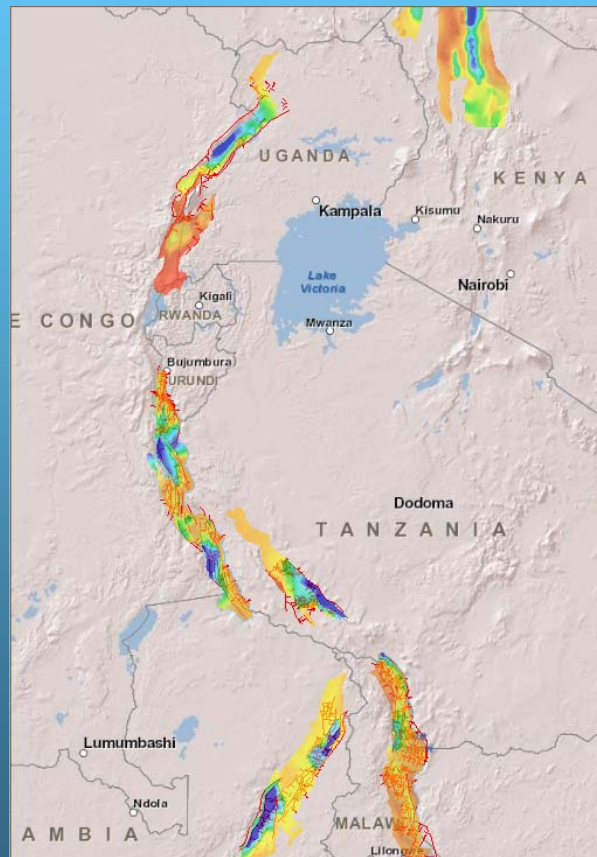
Morley et al (1999)

Flannery and Rosendhal (1989)

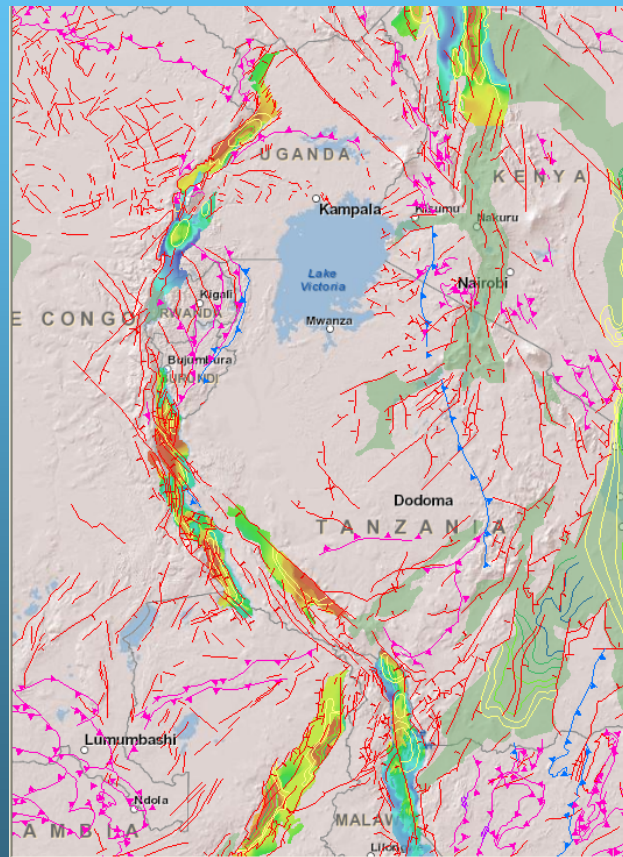
Banks et al (1995)

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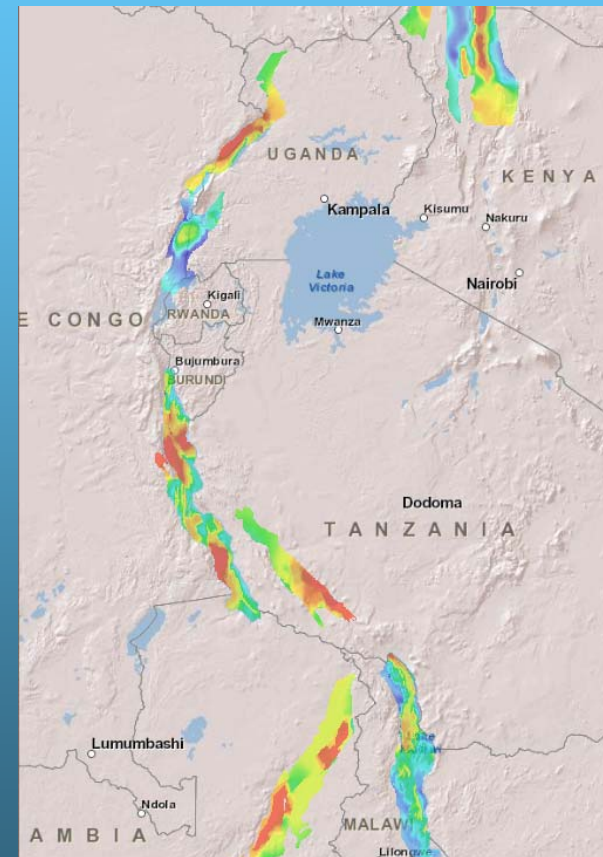
DEPTH-TO-BASEMENT EARS



Basement Elevation (msl)



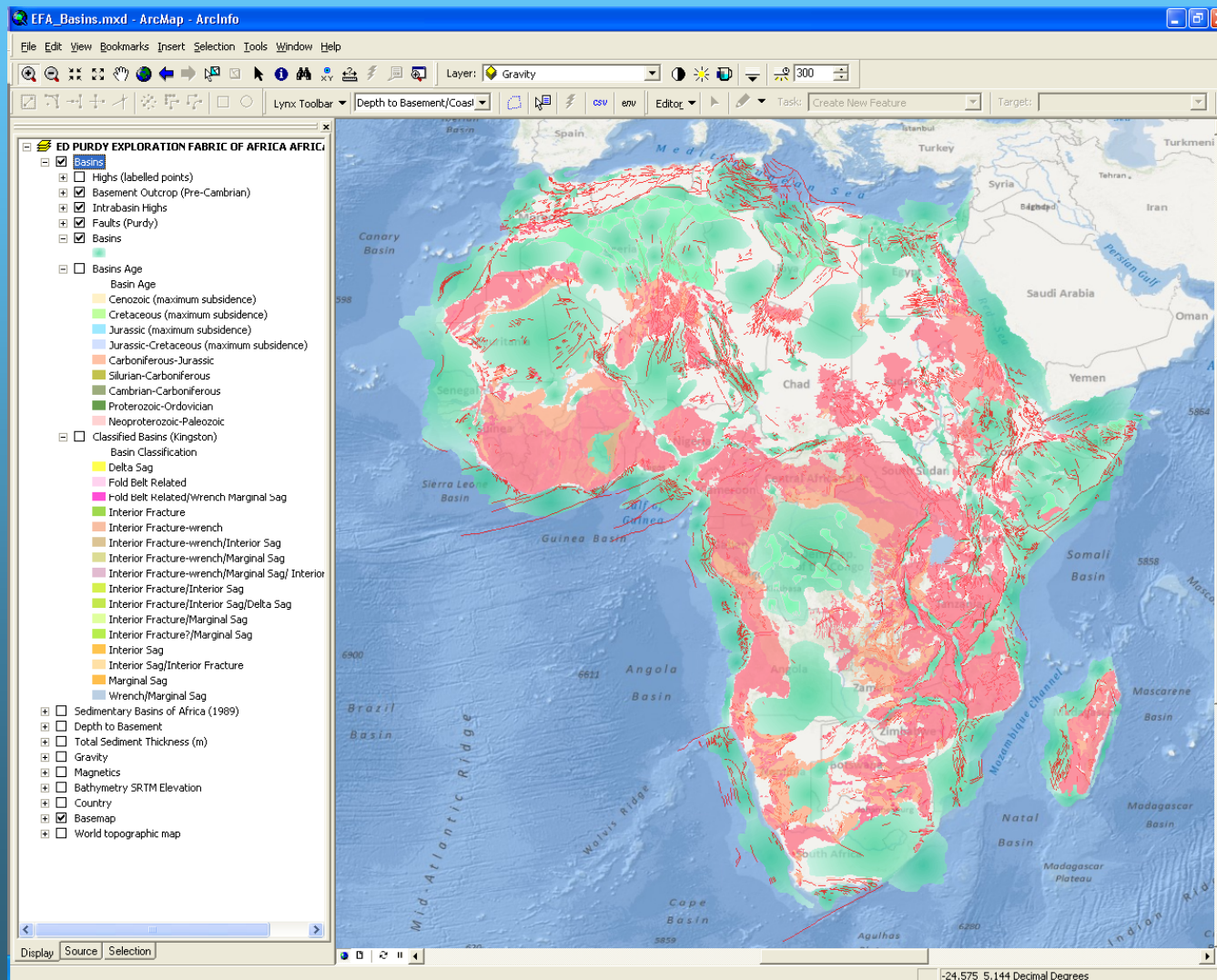
Basement Elevation (gl)



Sediment thickness (m)

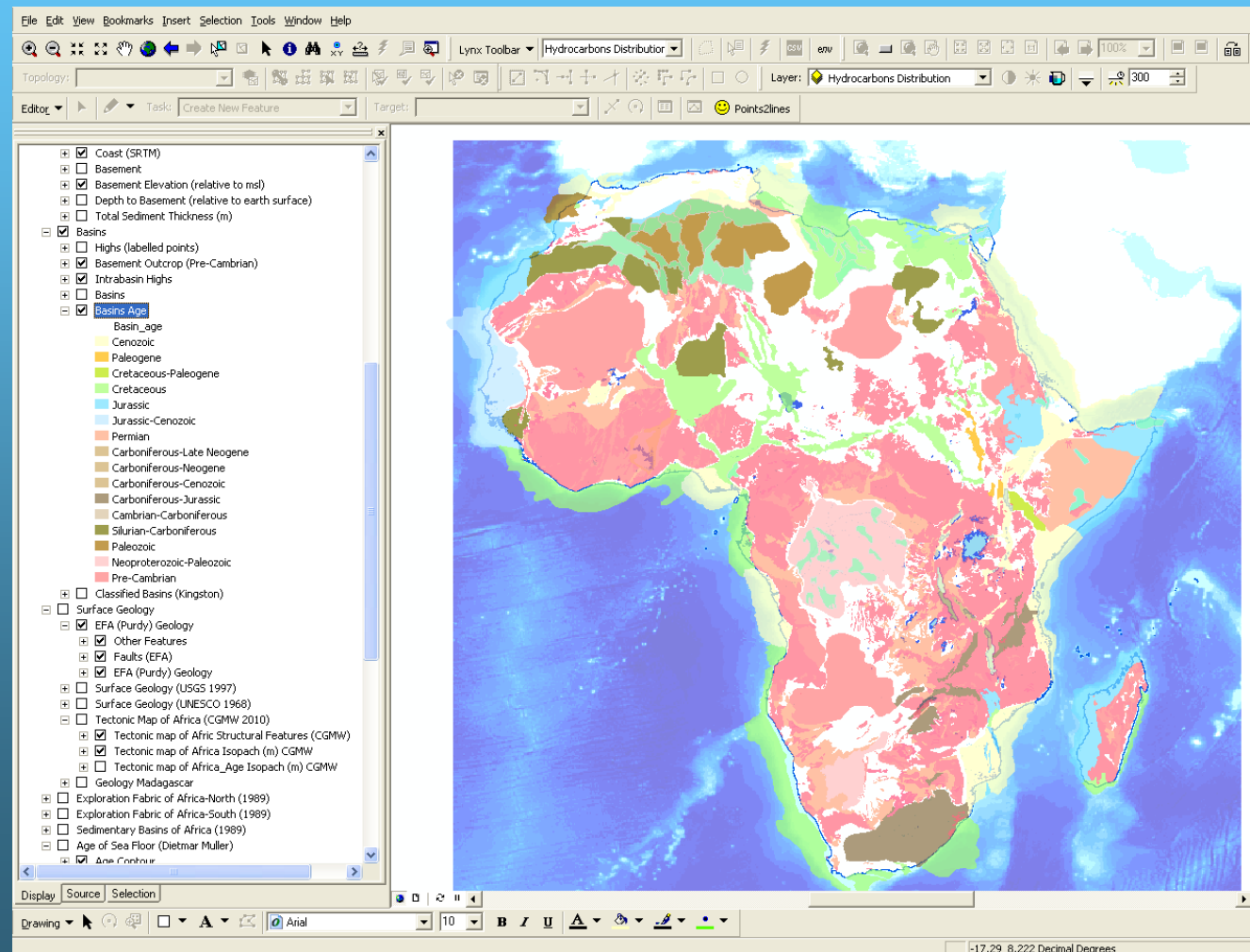
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AFRICAN BASIN LOCATION



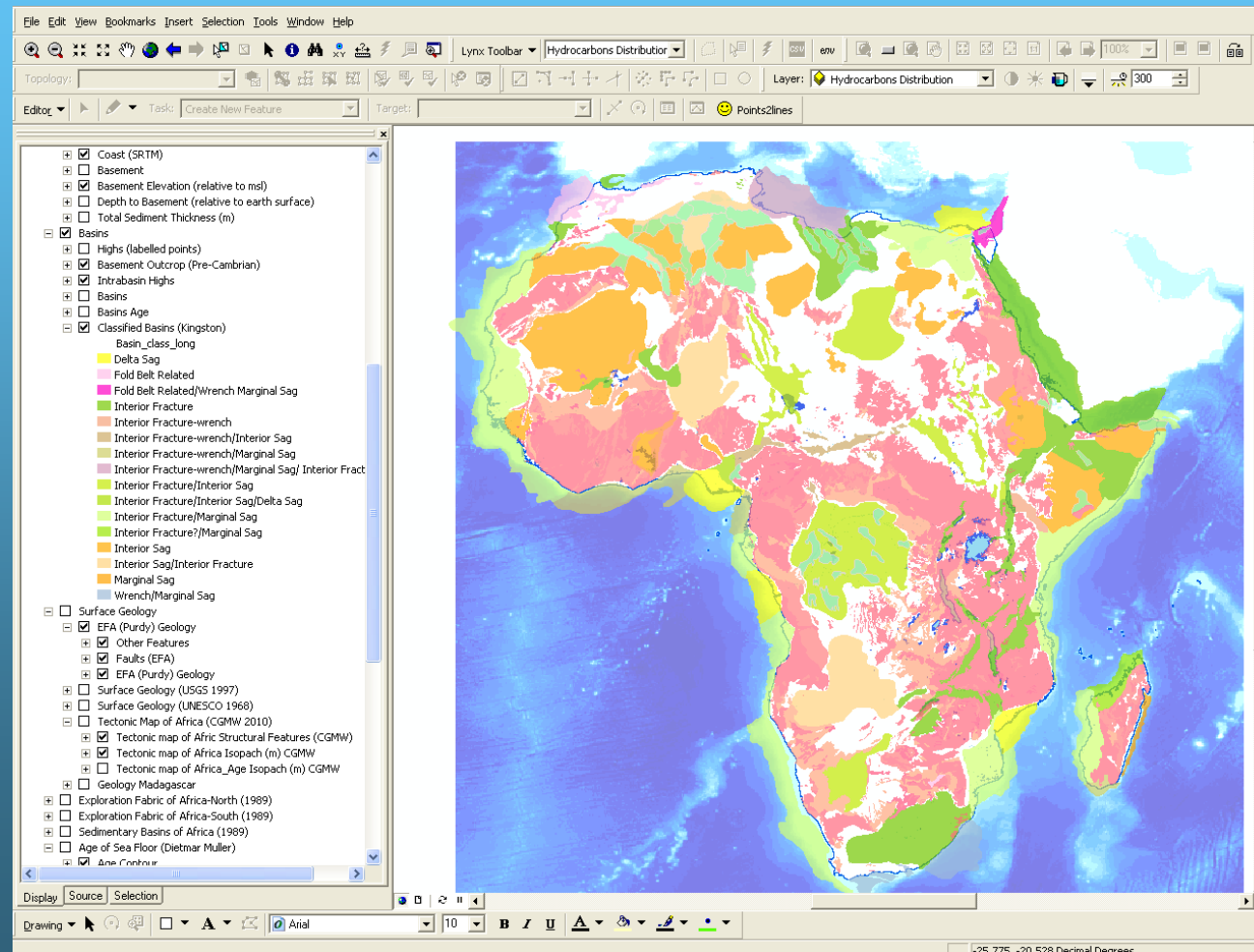
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AFRICAN BASIN AGE



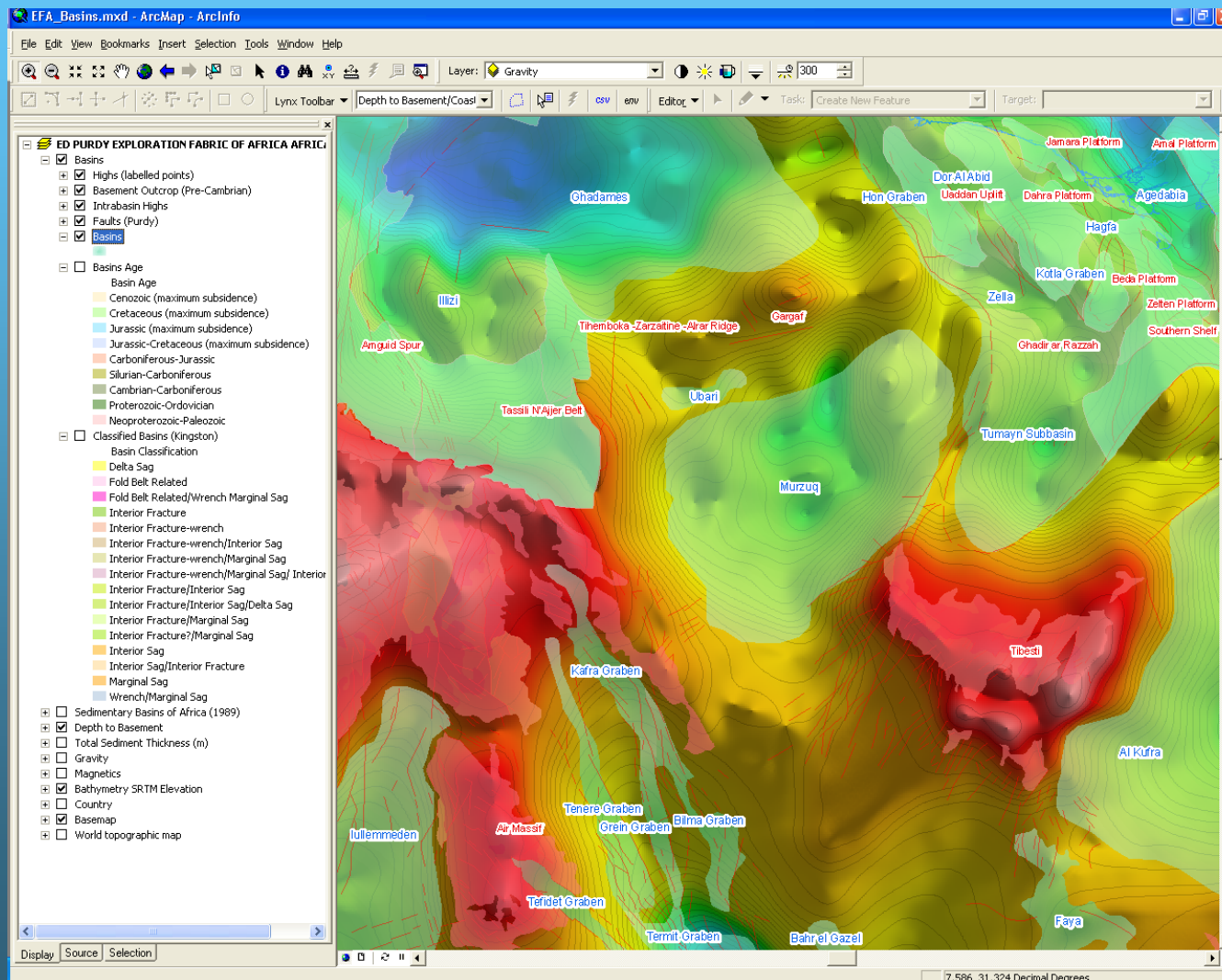
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AFRICAN BASINS (KINGSTON CLASSIFICATION)



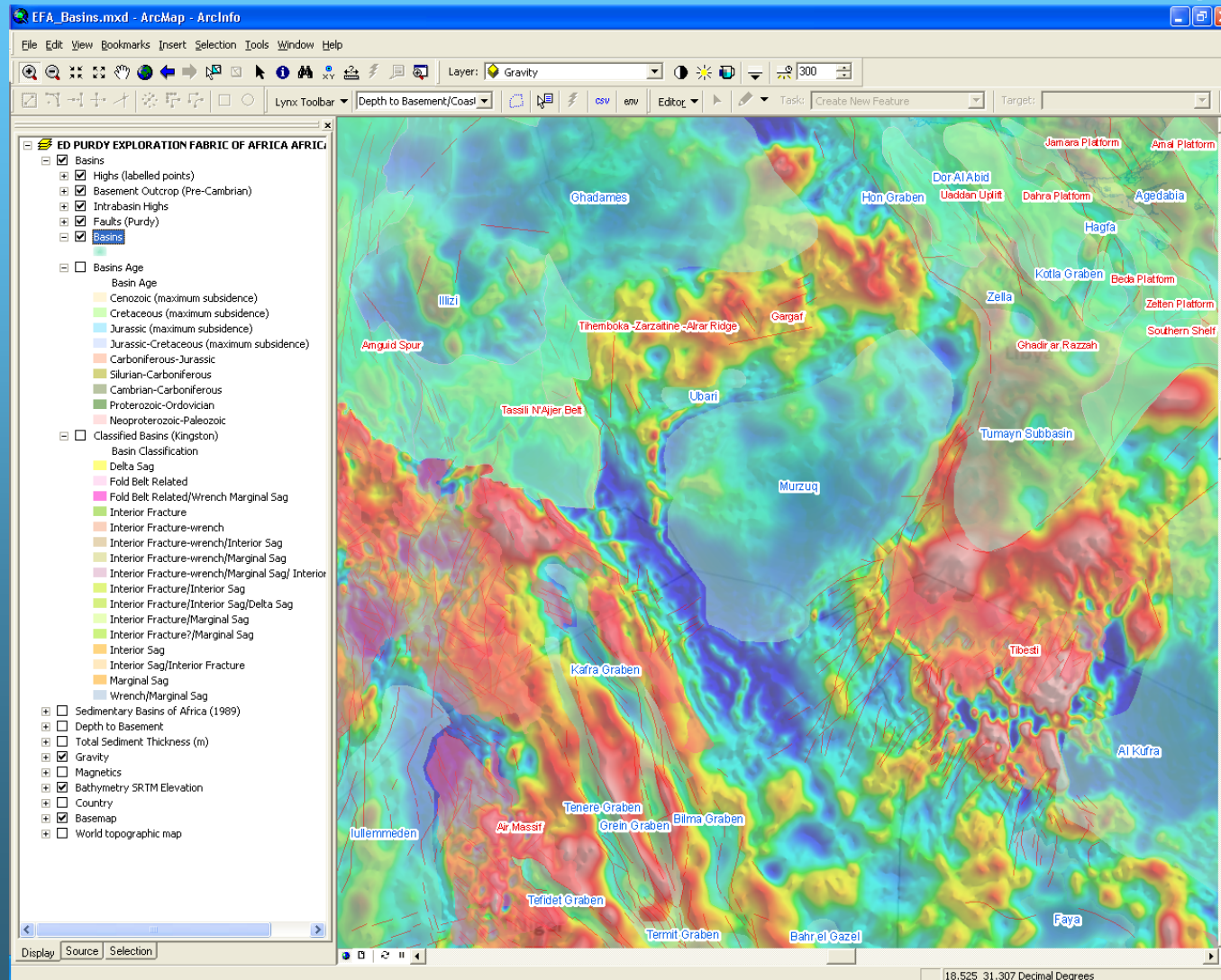
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AFRICAN BASINS (detail with depth-to-basement)



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

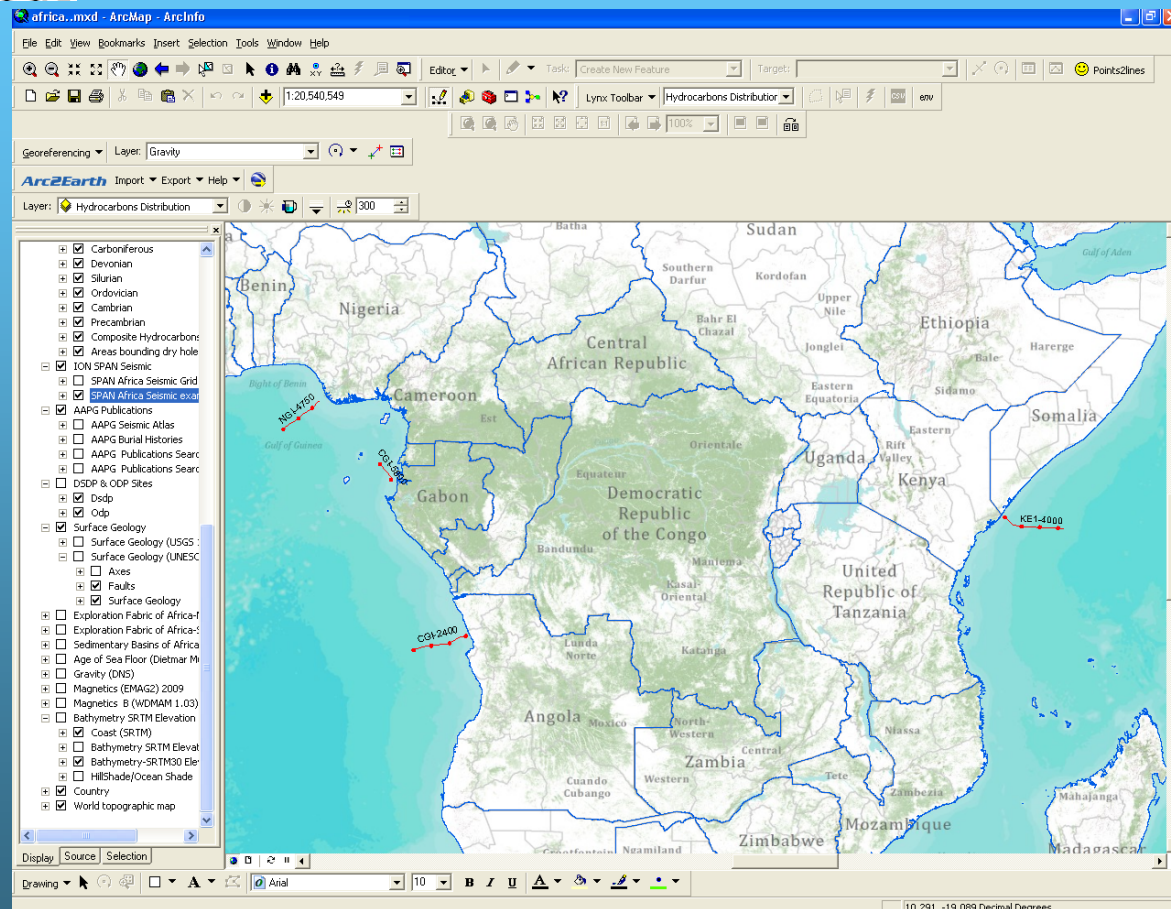
AFRICAN BASINS (detail with Isostatic Gravity)



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ION GXT AFRICA SPAN SEISMIC LINES

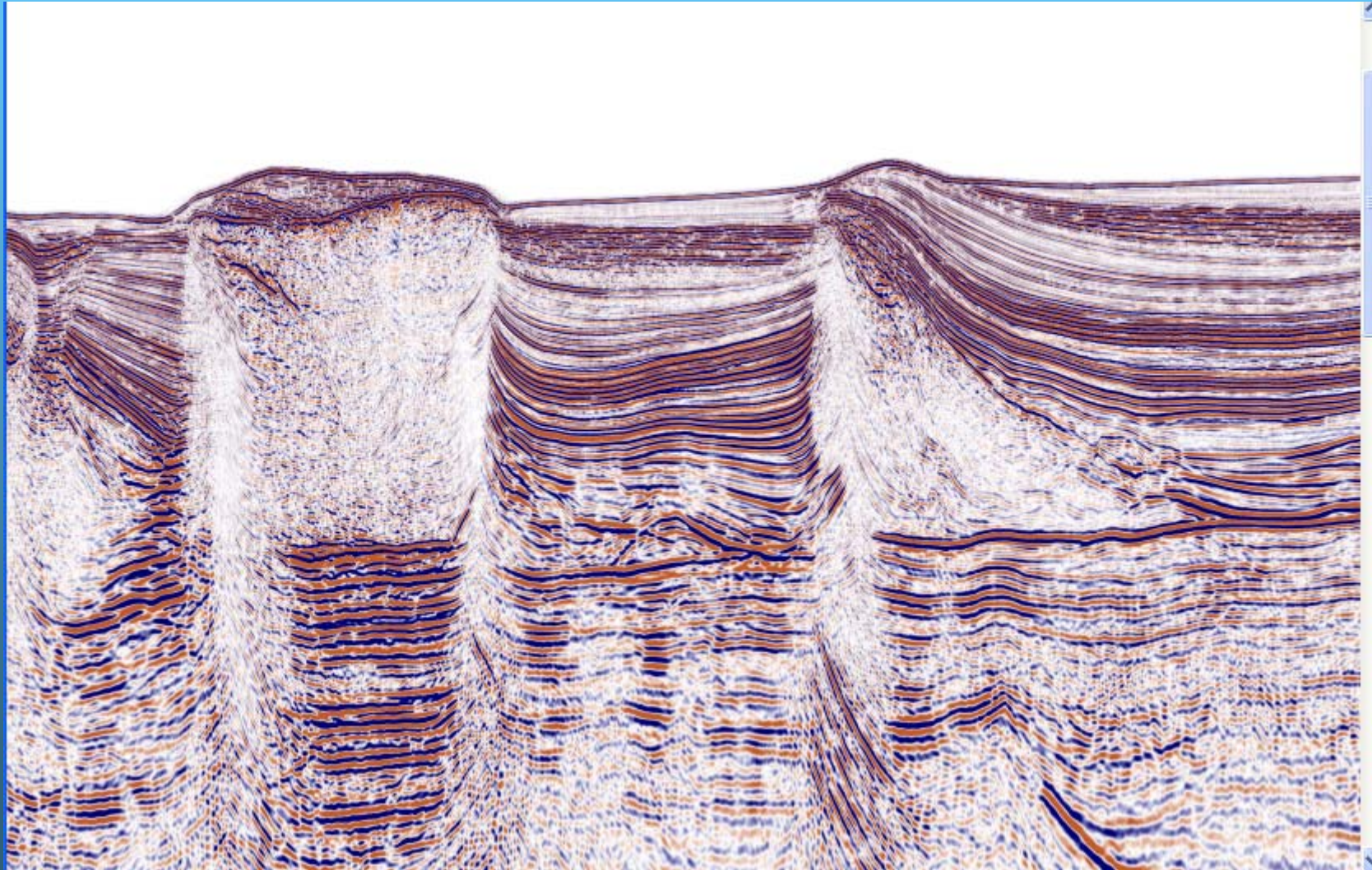


ION GXT have made four seismic examples from their AfricaSPAN data available to the project. The examples are hyperlinked from their locations. The locations of other lines in the surveys is also shown

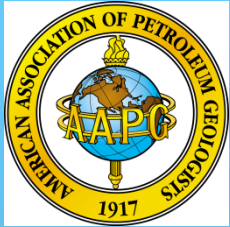
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



ION GXT AFRICA SPAN SEISMIC EXAMPLE



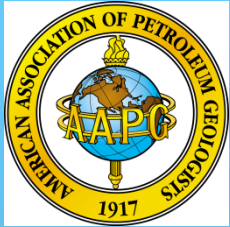
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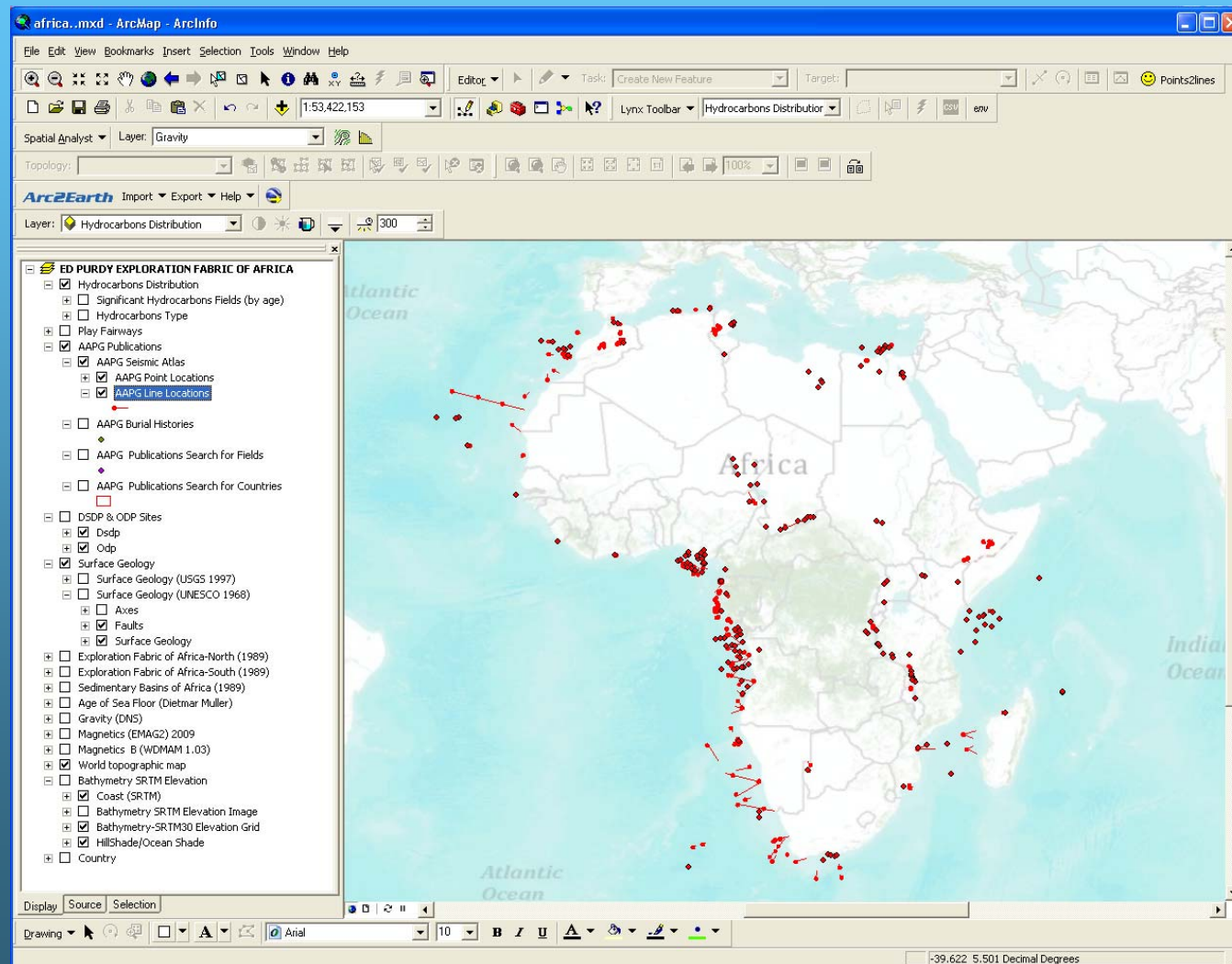
AAPG HYPERLINKED LAYERS

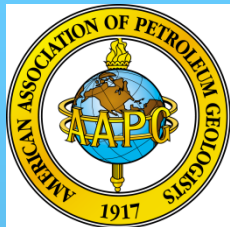
The AAPG group of layers all contain hyperlinks which allow searching of AAPG Datapages publications. The AAPG Seismic Atlas layer contains links to published seismic images in and around Africa. The seismic images can be viewed by using the identify icon and then clicking the hyperlink icon by the File_path field displayed in the identify box (NB seismic location can either be lines or points). Source information for the seismic images is also displayed in the identify box. Users using the Lynx ClickRelate toolbar can use this tool to locate and display hyperlinked data. AAPG Burial histories (in Excel spreadsheets) can be displayed in the same way as the seismic images. Users can also search for AAPG and associated publications based on field name or country. There are three search options, the first is via the AAPG Search and Discovery site which is free to all users. The second is via the AAPG Pay-Per-View site which list all publications meeting the search criteria and allows users to purchase individual publications. Finally for AAPG corporate subscribers with a registered IP address there is free access to all publications via the AAPG-Datapages Combined Publications Search.

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AAPG AFRICAN SEISMIC IMAGES LOCATION





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AAPG SEISMIC IMAGE SELECTION

afrika.mxd - ArcMap - ArcInfo

File Edit View Bookmarks Insert Selection Tools Window Help

Editor Task: Create New Feature Target: Points2Lines

1:7,049,844

Lynx Toolbar

AAPG Publications/AAPG :
AAPG Publications/AAPG Seismic Atlas/AAPG Point Locations
AAPG Publications/AAPG Seismic Atlas/AAPG Line Locations
AAPG Publications/AAPG Burial Histories
AAPG Publications/AAPG Publications Search for Fields
AAPG Publications/AAPG Publications Search for Countries
DSDP & ODP Sites/Odp
DSDP & ODP Sites/Odp
Surface Geology/Surface Geology (USGS 1997)
Surface Geology/Surface Geology (UNESCO 1968)/Axes
Surface Geology/Surface Geology (UNESCO 1968)/Faults
Surface Geology/Surface Geology (UNESCO 1968)/Surface Geol
Bathymetry SRTM Elevation/Coast (SRTM)

Topology: Layer: Hydrocarbons Distribution 300

Arc2Earth Import Export Help

ED PURDY EXPLORATION FABRIC OF AFRICA

- ☒ Hydrocarbons Distribution
 - ☐ Significant Hydrocarbons Fields (by age)
 - ☐ Hydrocarbons Type
- ☐ Play Fairways
- ☒ AAPG Publications
 - ☒ AAPG Seismic Atlas
 - ☒ AAPG Point Locations
 - ☒ AAPG Line Locations

11 features selected from AAPG Point Locations - Lynx ClickRelate

File Edit View Help

AAPG Point Locations

AAPG Point Locations

11 record(s) found

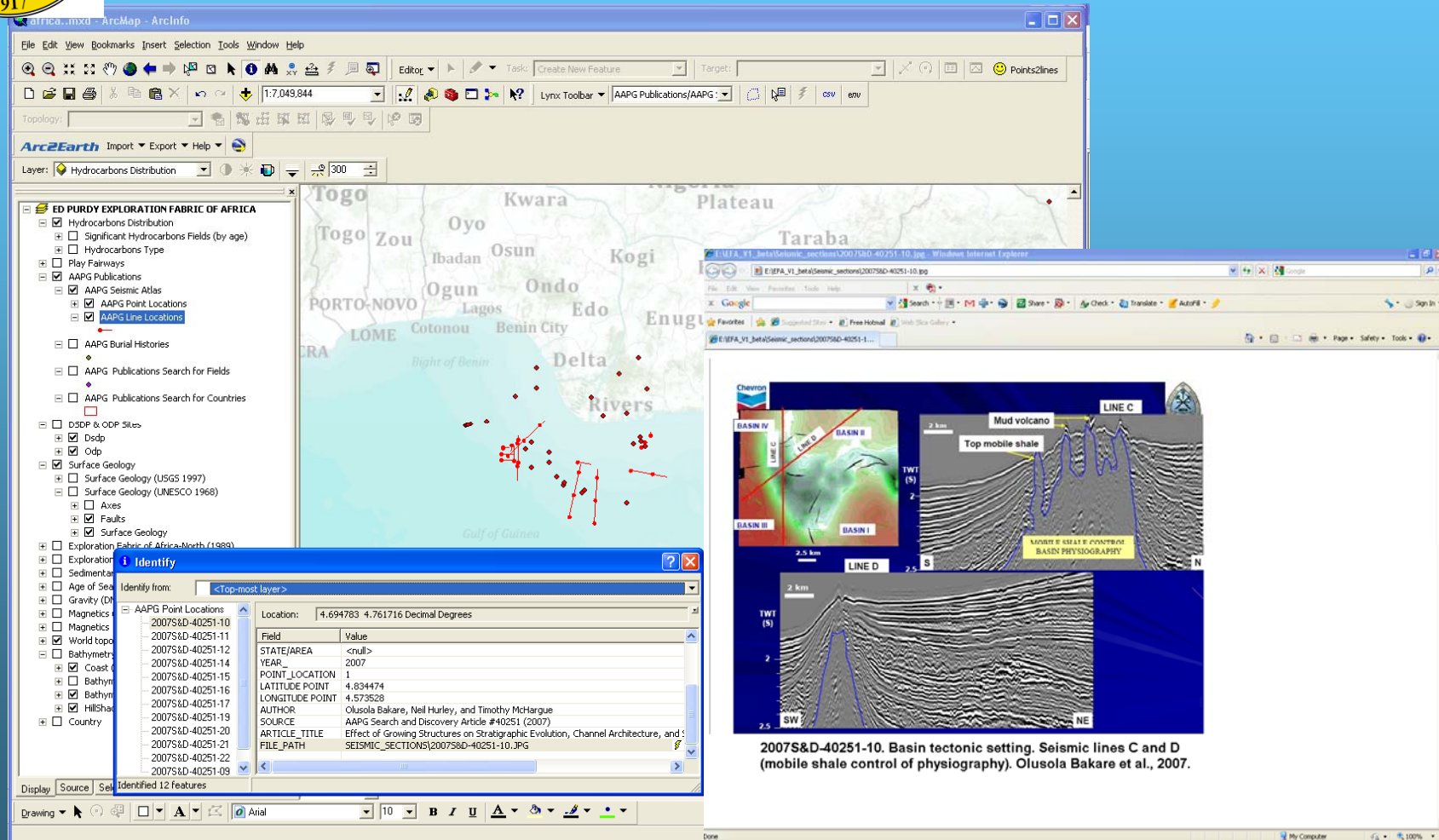
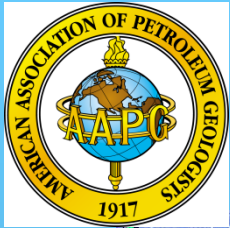
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STATE/AREA	
YEAR	1980
POINT_LOCATION	1
LATITUDE POINT	4.43714
LONGITUDE POINT	6.32483
AUTHOR	P. H. H. Nelson
SOURCE	AAPG M 30: Giant Oil and Gas Fields of the Decade 1968-1978, P 565-576
ARTICLE_TITLE	Role of Reflection Seismic in Development of Nembe Creek Field, Nigeria
FILE_PATH	SEISMIC_SECTIONS\1980MEM30-565-06.JPG
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REC_NO	4447
NAME	1980MEM30-565-07
REGION	AFRICA

Display Source Selection

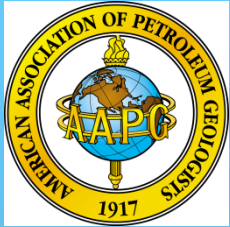
Drawing Select current layer for map

7.781 8.989 Decimal Degrees

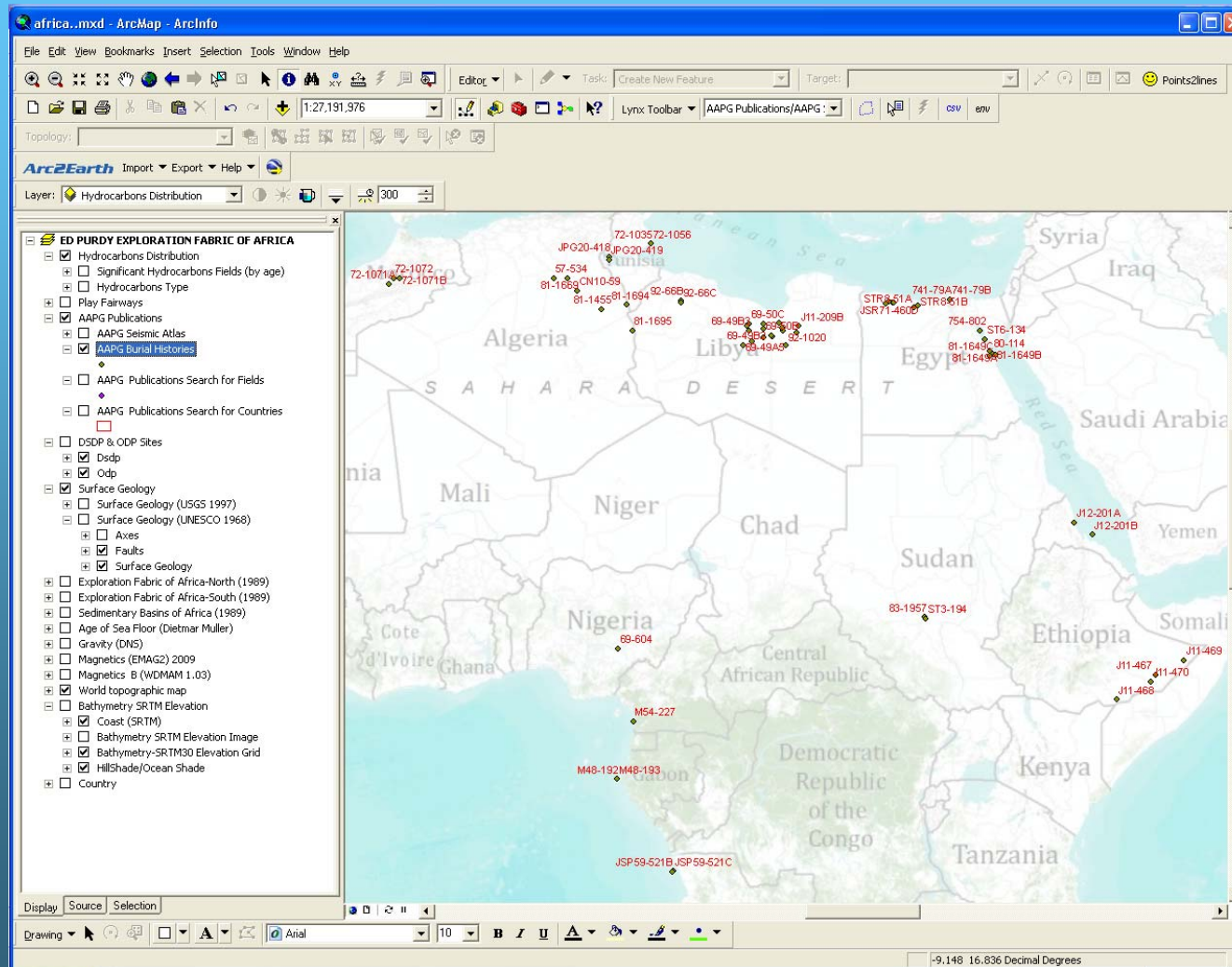
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 AAPG SEISMIC IMAGES



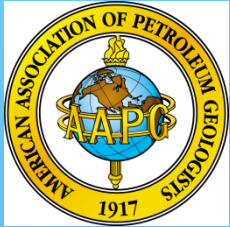
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



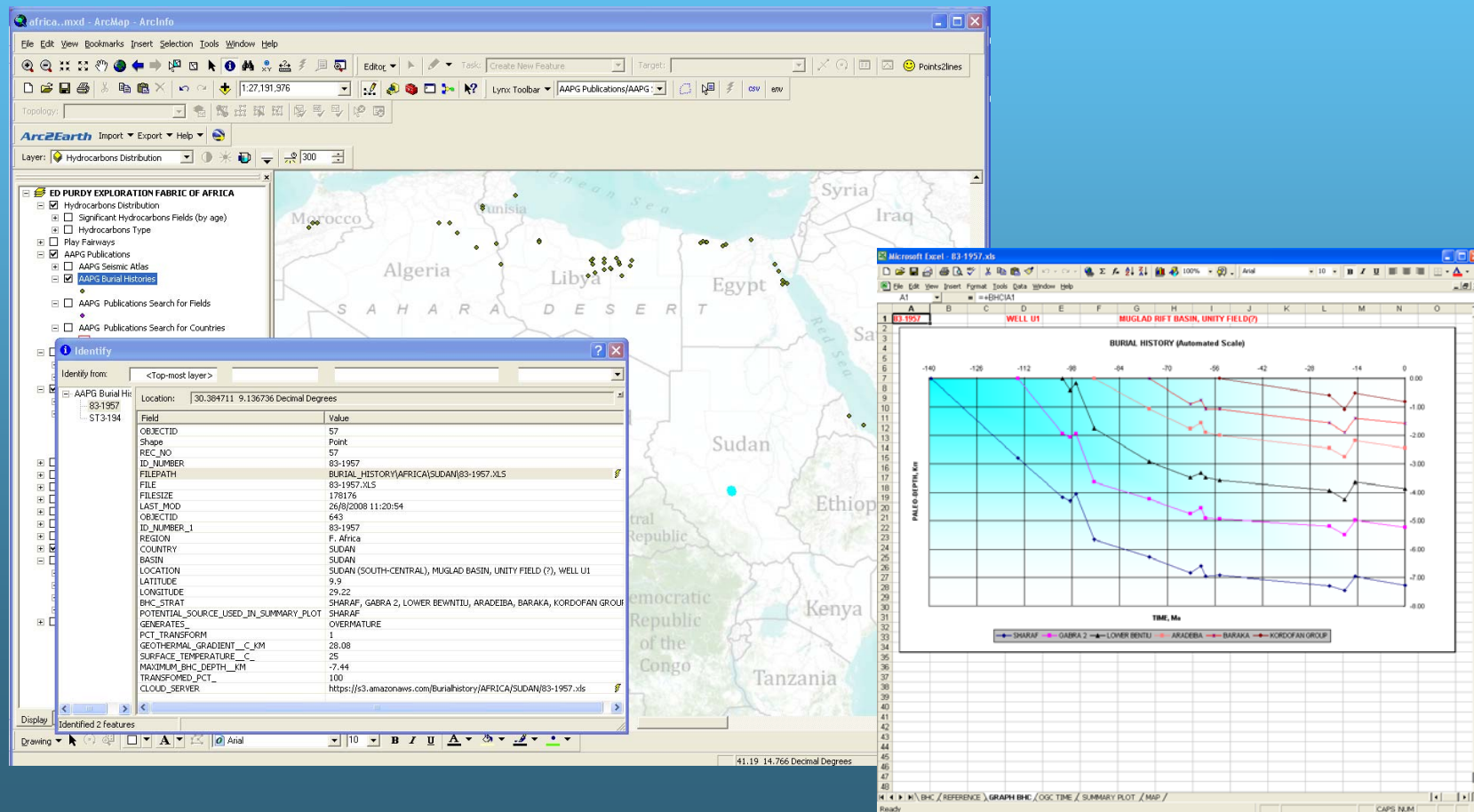
AAPG BURIAL HISTORIES LOCATIONS



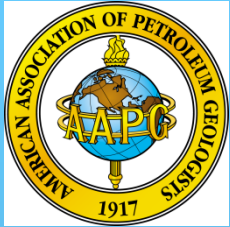
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



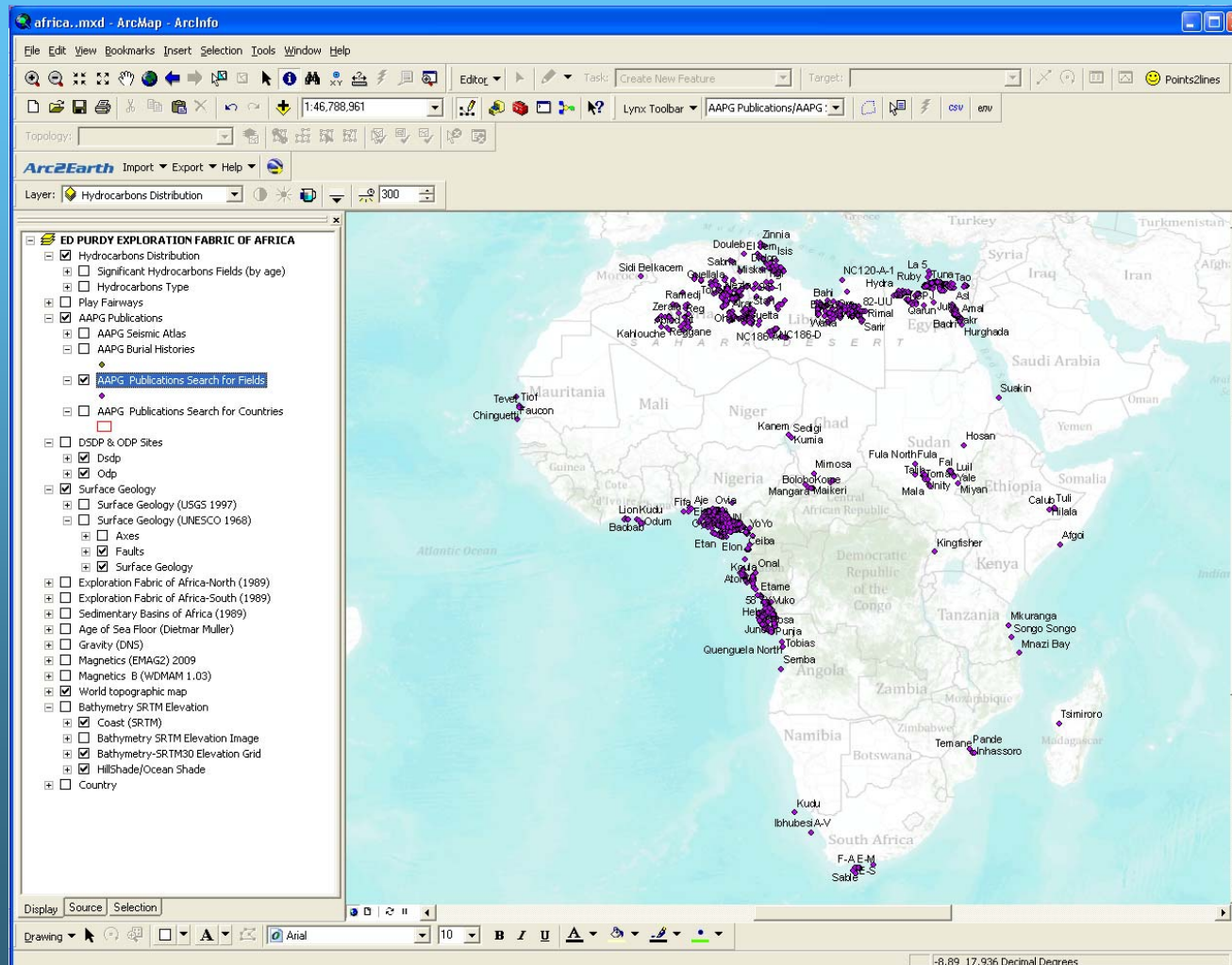
AAPG BURIAL HISTORIES EXAMPLE



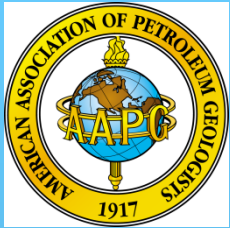
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



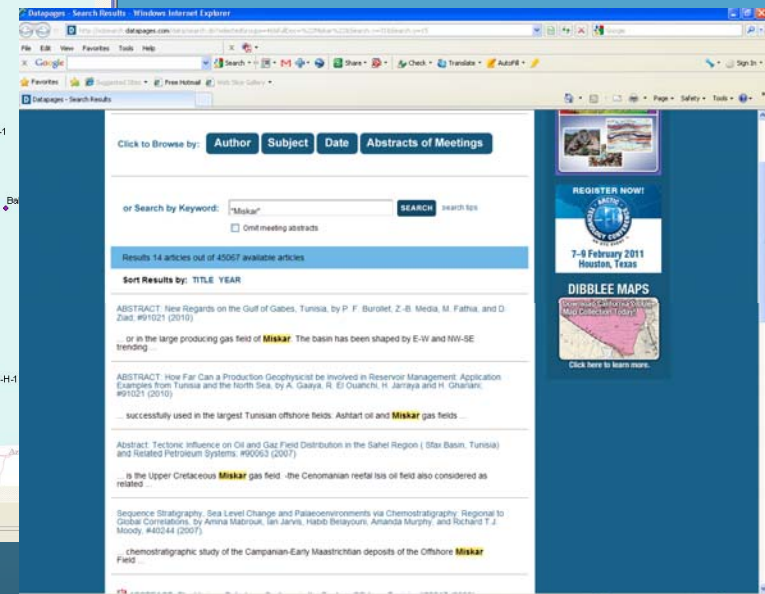
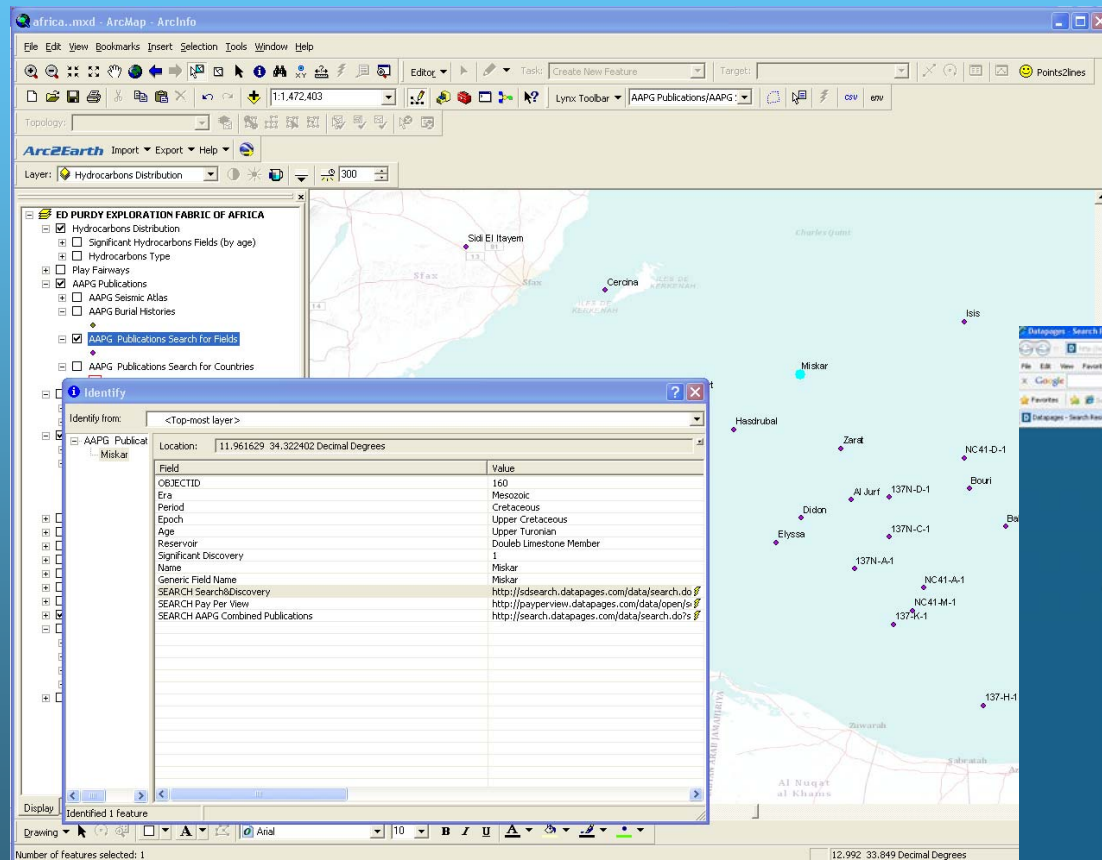
AAPG PUBLICATIONS SEARCH -- FIELDS

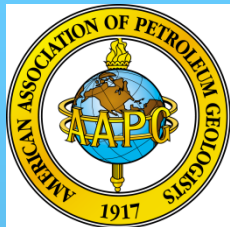


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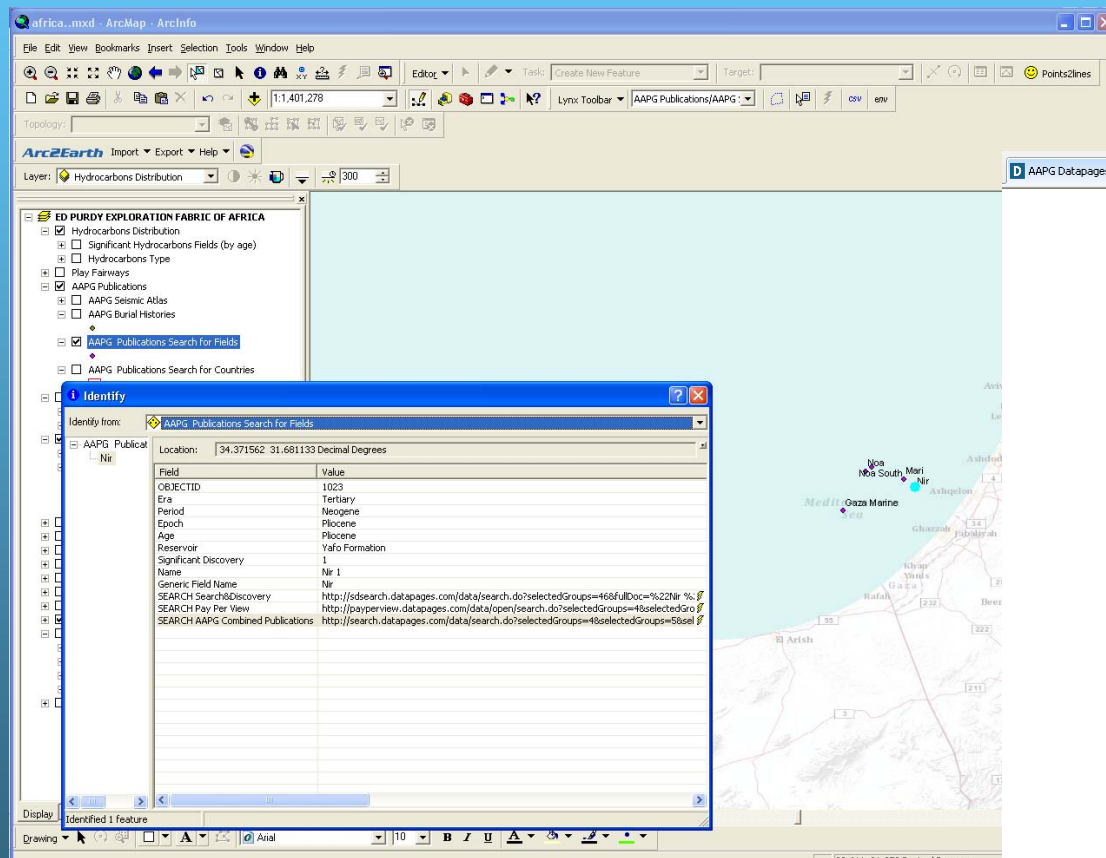
AAPG SEARCH & DISCOVERY -- FIELDS



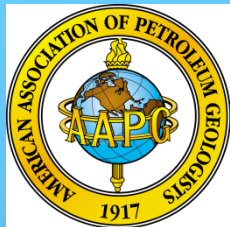


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AAPG COMBINED PUBLICATIONS -- FIELDS



AAPG Datapages - search results		
"Gotcha Deep" Project: PVT Quality Fluid Samples Using New MDT Sampling Probes Lead to More Accurate Reservoir Answers in Less Time	2007	GCAGS Transactions PDF
Peter Weinheber, John Johns, Paul Babasick		
... In the visible to near-infrared (NIR) portion of the spectrum. The spectrum is shown in Figure 8 ...		
Clastic Intrusion at the Base of Deep-water Sands: A Trap-forming Mechanism in the Eastern Mediterranean	2007	AAPG Special Volumes
Jose Frey-Martinez, Joe Cartwright, Ben Hall, Mads Huuse, Pages 49 - 63		
... (location of Figure 8). NMC = Nir mound complex; IMC = Mari mound complex; AM = Alpha mound. The ...		
Reflectance spectroscopic mapping of diagenetic heterogeneities and fluid-flow pathways in the Jurassic Navajo Sandstone	2007	AAPG Bulletin
Brenda Beitler Bowen, Brigitte A. Martini, Marjorie A. Chan, William T. Parry, Pages 173 - 190, Volume 91, Issue 2		
... absorption features in the visible (VIS) (0.400.65 m), near-infrared (NIR) (0.652.00 m), and short-wave ...		
Introduction to Geological Perspectives of Global Climate Change, by Lee C. Gerhard, #70030 (2007).	2007	Search and Discovery
... and Planetary Science Letters, v. 199, p. 459-472. Shaviv, Nir J., and Jan Veizer, 2003 ...		



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AAPG COMBINED PUBLICATIONS -- FIELDS

AAPG Datapages - search results

- ["Gotcha Deep" Project: PVT Quality Fluid Samples Using New MDT Sampling Probes Lead to More Accurate Reservoir Answers in Less Time](#) 2007 GCAGS Transactions PDF
Peter Weinheber, John Johns, Paul Babasick
... in the visible to near-infrared (NIR) portion of the spectrum. The spectrum is shown in Figure 8 ...
- [Clastic Intrusion at the Base of Deep-water Sands: A Trap-forming Mechanism in the Eastern Mediterranean](#) 2007 AAPG Special Volumes
Jose Frey-Martinez, Joe Cartwright, Ben Hall, Mads Huuse, Pages 49 - 63
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- [Reflectance spectroscopic mapping of diagenetic heterogeneities and fluid-flow pathways in the Jurassic Navajo Sandstone](#) 2007 AAPG Bulletin
Brenda Beitler Bowen, Brigitte A. Martini, Marjorie A. Chan, William T. Parry, Pages 173 - 190, Volume 91, Issue 2
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- [Introduction to Geological Perspectives of Global Climate Change, by Lee C. Gerhard, #70030 \(2007\).](#) 2007 Search and Discovery
... and Planetary Science Letters, v. 199, p. 459-472. Shaviv, Nir J., and Jan Veizer, 2003 ...

http://search.datapages.com/data/specpubs/memoir87/CHAPTER03%20Folder/IMAGES/CHAPTER03.PDF - Windows Internet Explorer

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Google Search

Pages

18 19 20 21 22 23

3

Clastic Intrusion at the Base of Deep-water Sands: A Trap-forming Mechanism in the Eastern Mediterranean

Jose Frey-Martinez¹
¹Lab. School of Earth, Ocean and Planetary Sciences, Cardiff University, Cardiff, United Kingdom

Ben Hall
BG Group, Thames Valley Park Drive, Basing, United Kingdom

Joe Cartwright
¹Lab. School of Earth, Ocean and Planetary Sciences, Cardiff University, Cardiff, United Kingdom

Mads Huuse
¹Lab. School of Earth, Ocean and Planetary Sciences, Cardiff University, Cardiff, United Kingdom

ABSTRACT

Three-dimensional seismic data from the continental margin offshore Israel (eastern Mediterranean) show several large-scale mound-like structures interpreted to be clastic intrusions. The structures are confined to the Zanclean (early Pliocene) and lower Gelasian (late Pliocene) intervals and restricted to an area of 40 × 20 km (24 × 12 mi) along the Afek submarine canyon, a former depositional fairway of Oligocene age. Most of the features are circular to oval in plan view, range from 0.5 to 2 km (0.3 to 1.2 mi) in diameter at their base, and are flanked by kilometer-scale depressions interpreted as regions of sediment depletion. In cross section, the mounds are as much as 400 m (1,300 ft) in height and have flank dips of as much as 20–25°. The largest structures may reach as much as approximately 0.75 km³ (0.17 mi³) in volume and represent economic hydrocarbon reservoirs.

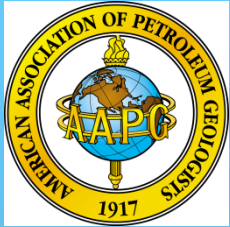
Well data and direct hydrocarbon indicators show that the mounds are predominantly composed of gas-saturated sandstones along their flanks and crests, whereas their center is heterolithic. Petrophysical interpretation indicates the presence of chaotic and remobilized sediments in the core of the structures. The relationships of the mounds to the overburden exhibit both depositional and deformational geometries (e.g., onlap, forced folding). The proposed model for their formation is hydraulic jacking up of the overburden by focused vertical and lateral intrusion of clastic sediments during shallow burial. Several episodes of intrusion alternated with the

¹Present address: Institut VFR, Paseo de la Castellana, Madrid, Spain.

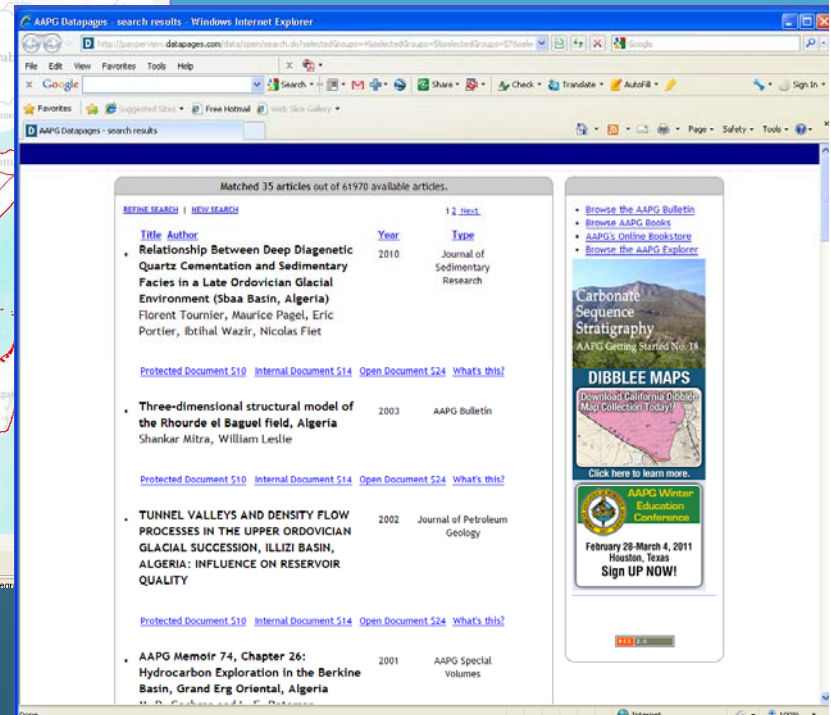
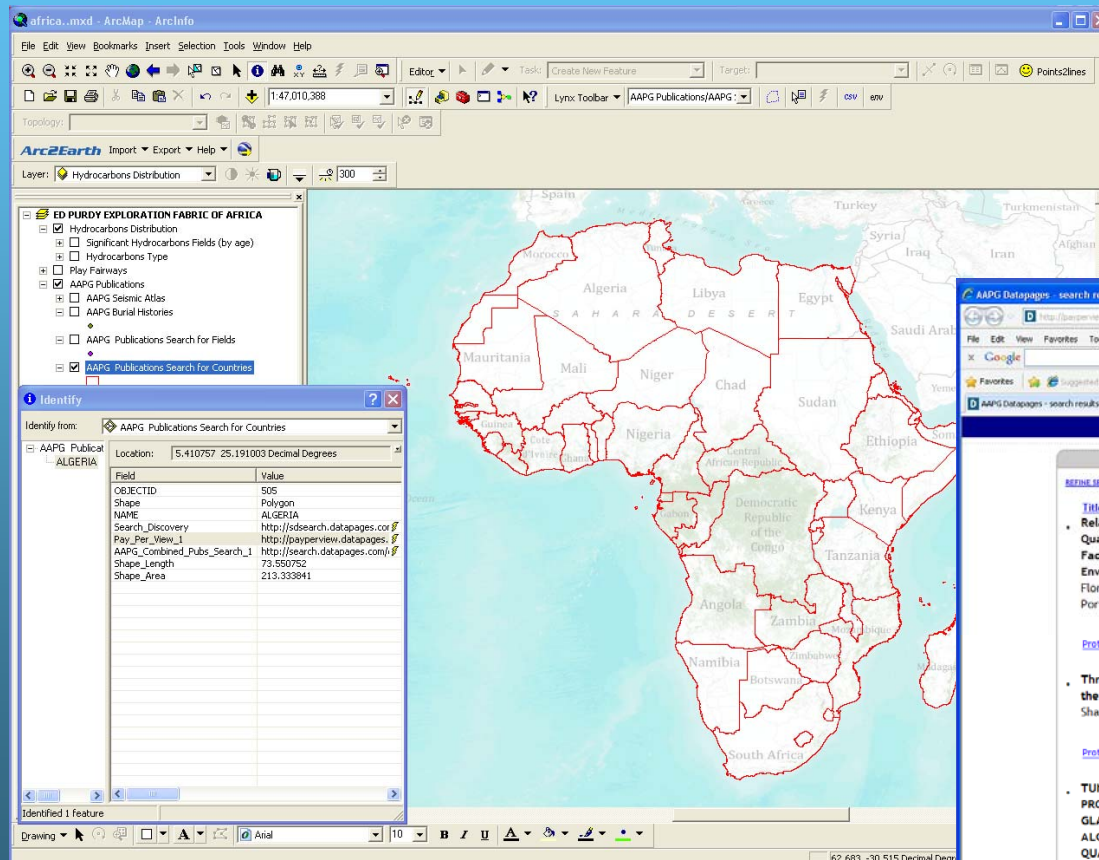
Copyright ©2007 by The American Association of Petroleum Geologists.
DOI: 10.1306/07060700030

Unknown Zone

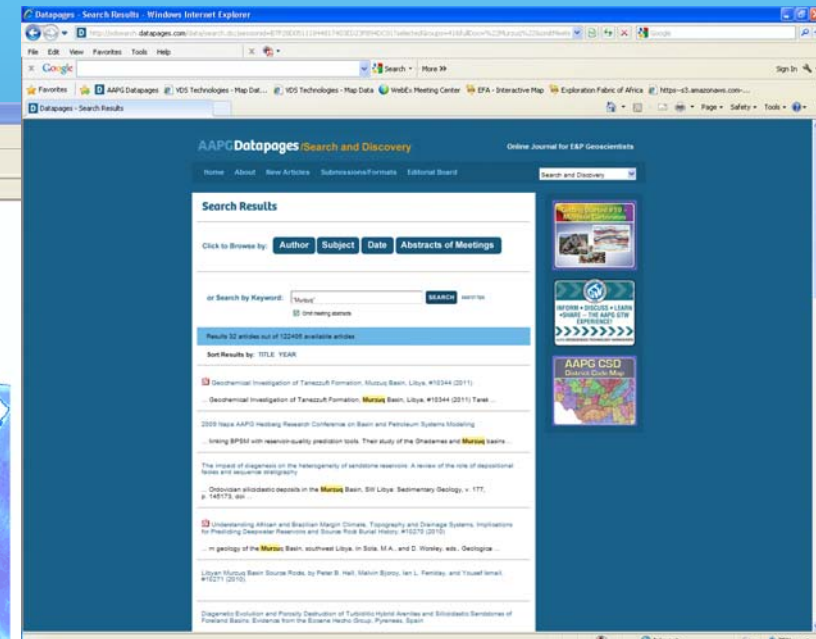
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



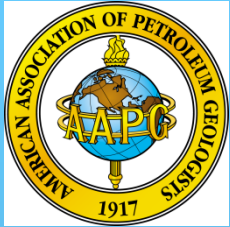
AAPG PAY-PER-VIEW – AFRICAN COUNTRIES



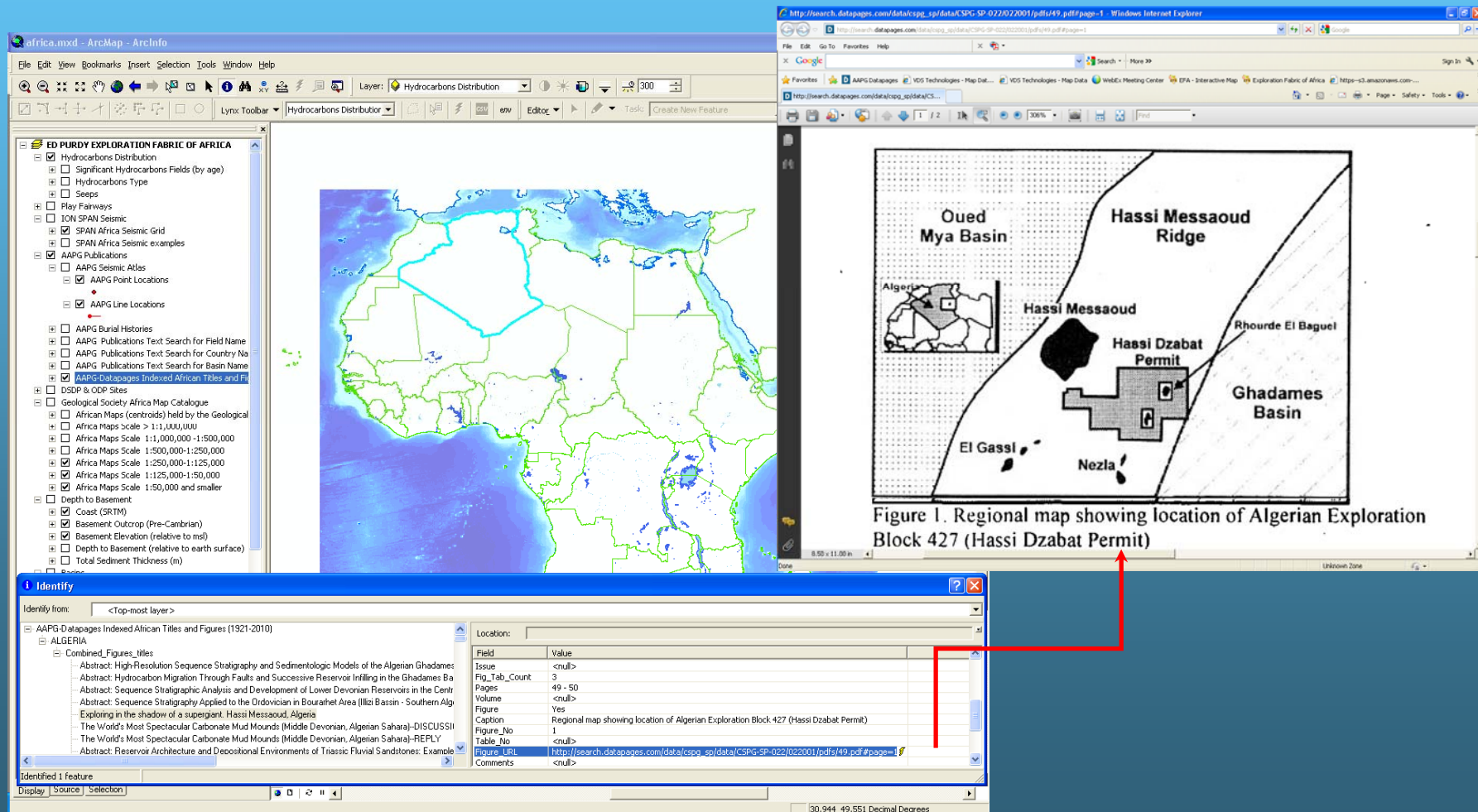
The screenshot shows the 'Identify' window in QGIS. The 'Identify from' dropdown is set to '<Top-most layer>'. The 'Location' is specified as '13.955366 24.983604 Decimal Degrees'. A table of fields and values is displayed, including 'Other_feature_name' (null), 'Feature_type' (basin), and 'Elevation' (negative). Below the table, a 'Search Discovery' section shows a list of search results, with the first result highlighted: 'http://pdssearch.datapages.com/data/search.do?selectedGroups=466&doc%20nr%20%20Search.nr=316&search.y=16'. The 'Identified 1 feature' section at the bottom shows the 'Display' button selected.



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

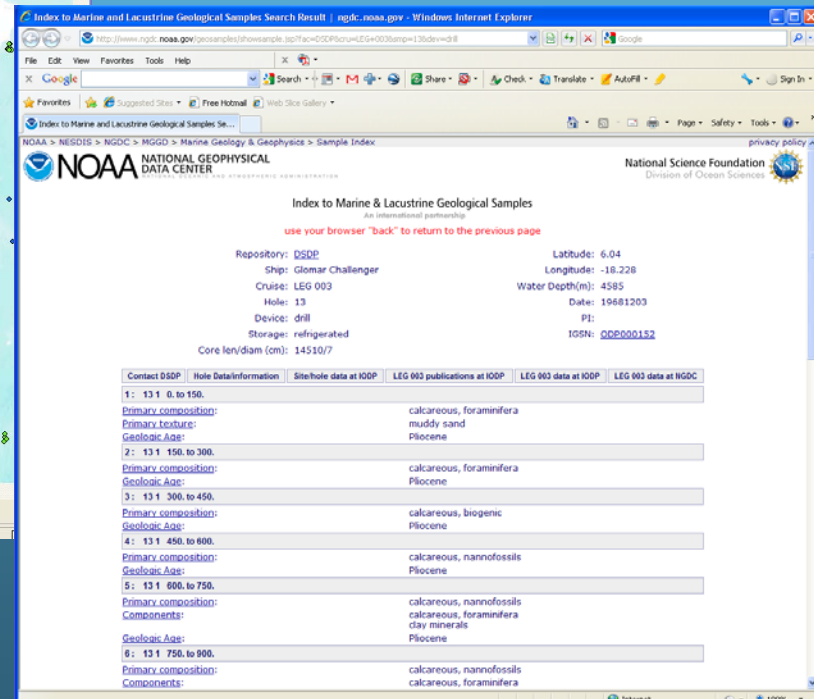
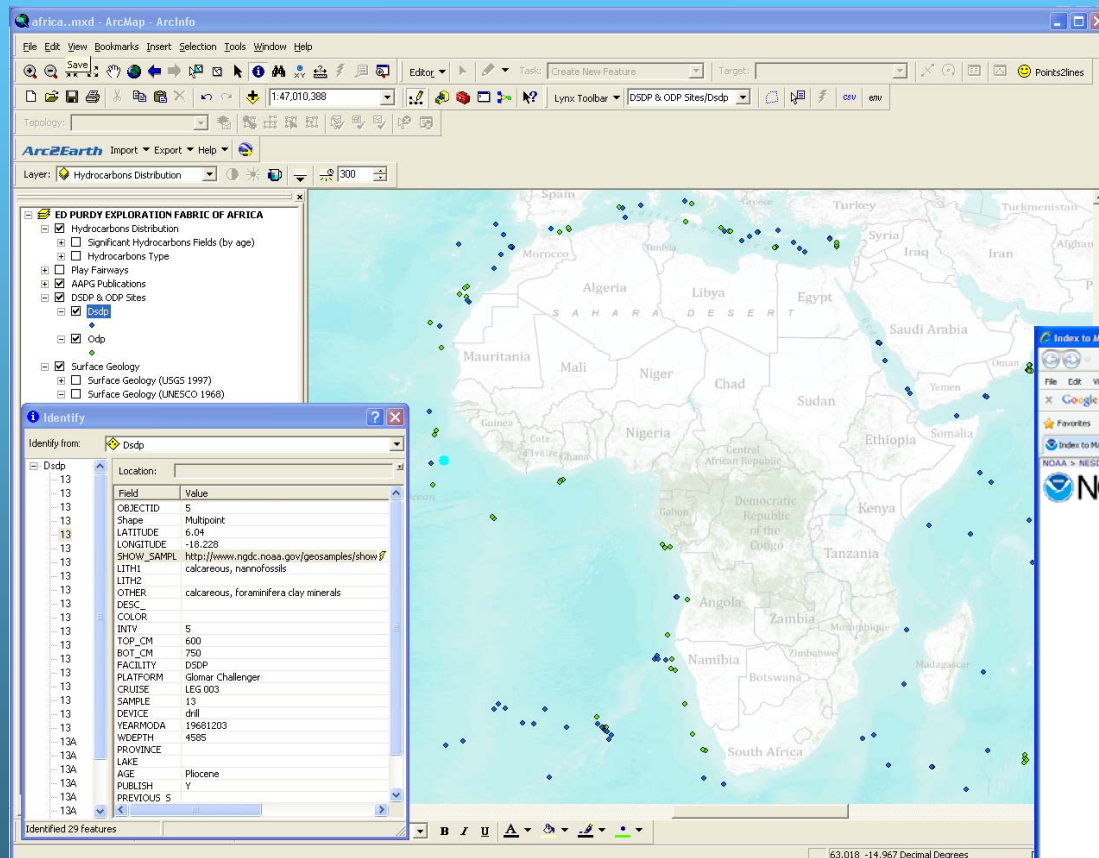


AAPG INDEXED FIGURES AFRICAN COUNTRIES (1921-2010)



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

DSDP-ODP SITES SEARCHING



The ArcMap project also has hyperlinks to DSDP and ODP sites. The layers show the location of deepsea drilling sites and contain hyperlinks to archived data for the sites stored at NOAA and Texas A&M.

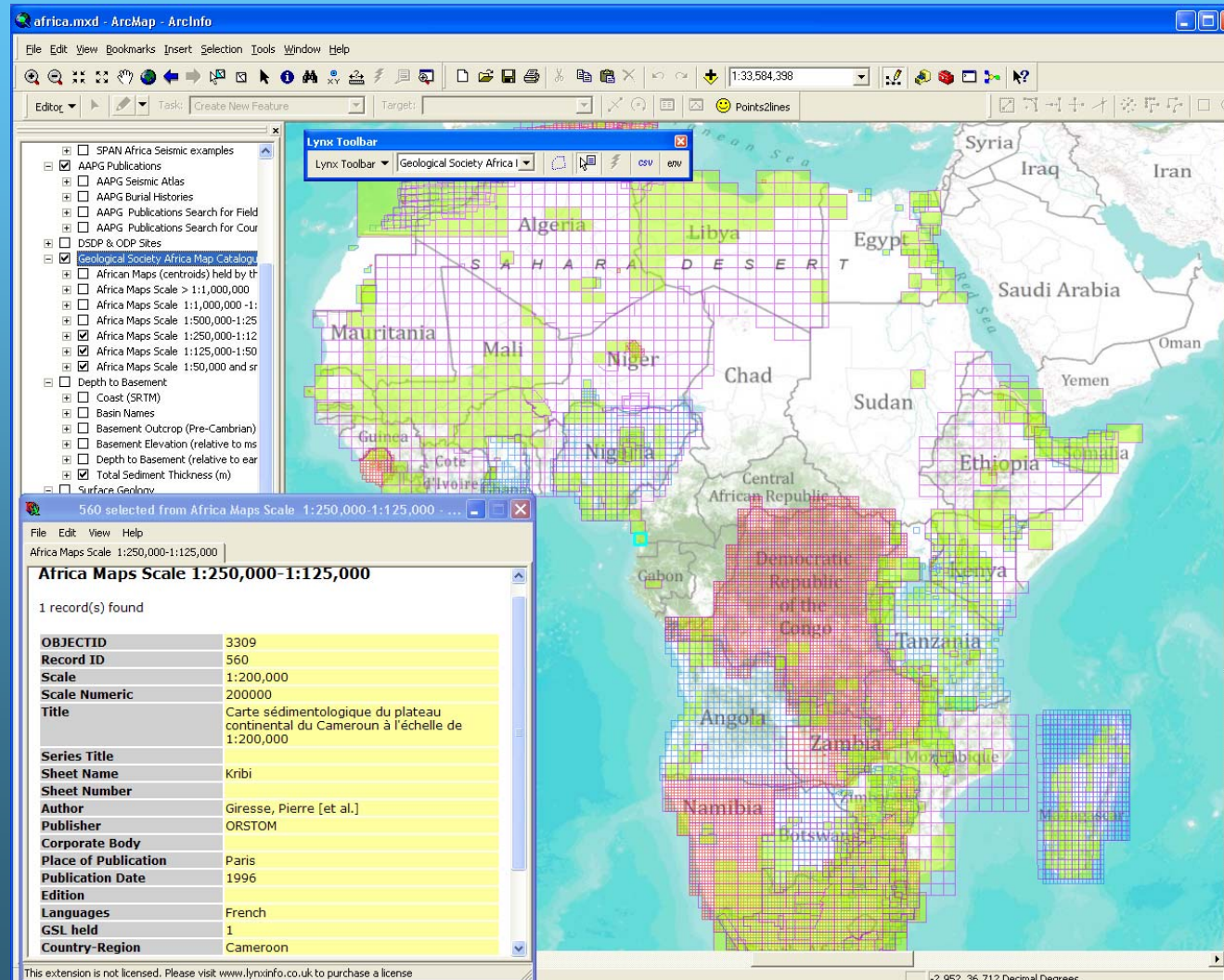
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

GEOLOGICAL SOCIETY MAP INDEX

The Geological Society have kindly allowed the EFA Team to incorporate the Africa part of the Society's spatial map index into the project. The index shows the location of over 2,700 maps held in the map library at the Geological Society. In addition to the map locations (which are displayed according to scale), each map outline has associated information including author, title, date etc. The catalogue also shows the locations of other maps which may have been produced or are intended to be produced but which are not available from the Geological Society

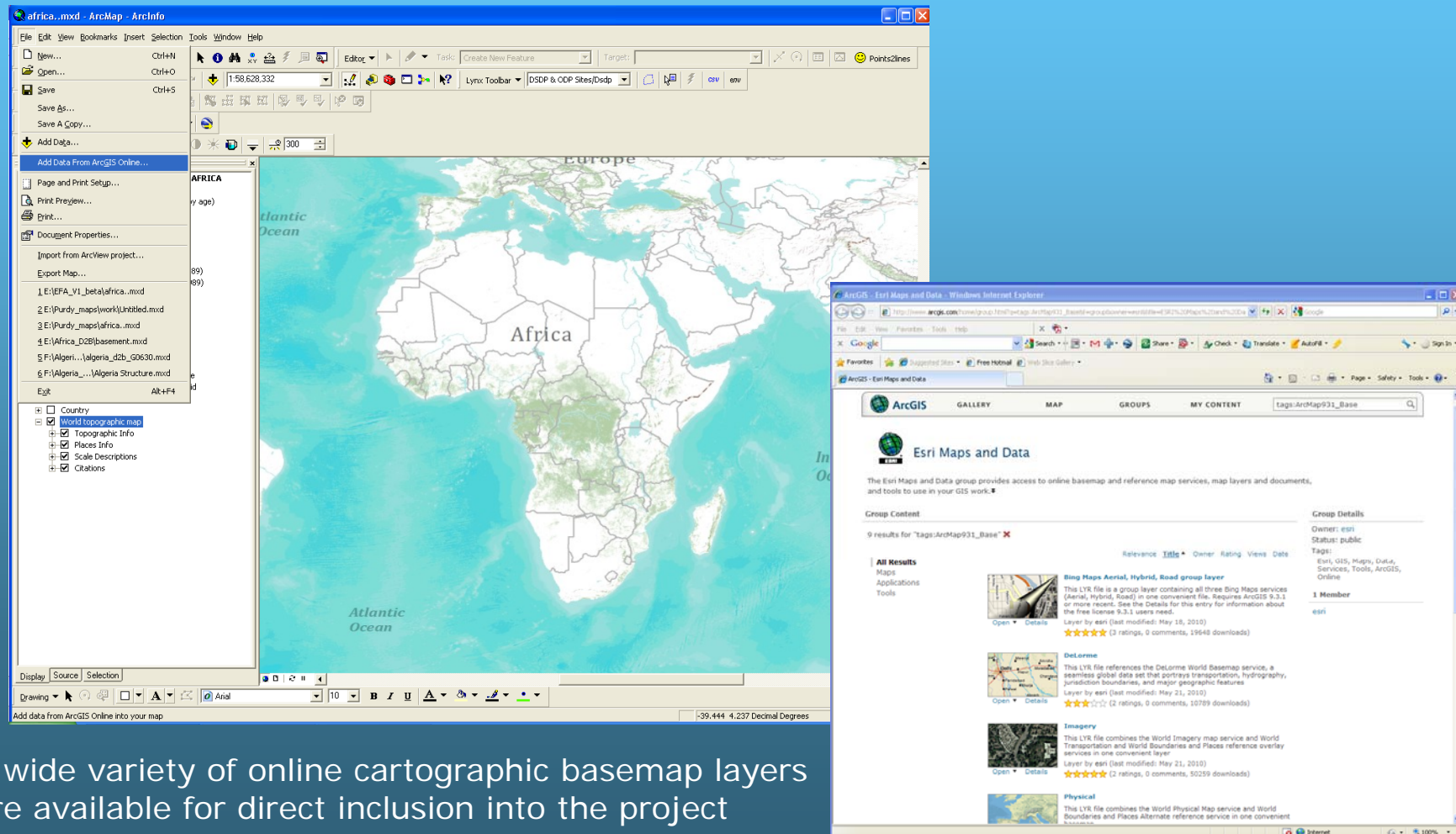
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

SPATIAL INDEX OF GEOLOGICAL SOCIETY AFRICA MAPS



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

ONLINE CARTOGRAPHIC BASEMAP LAYERS

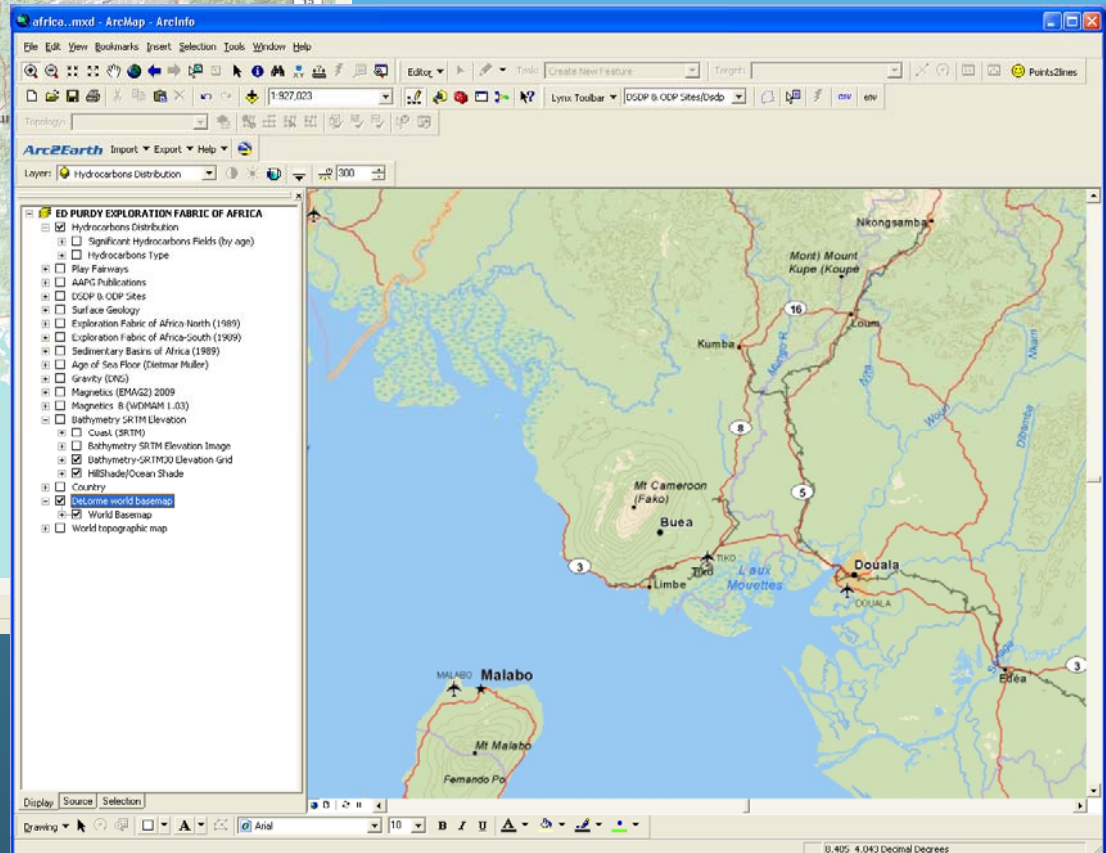
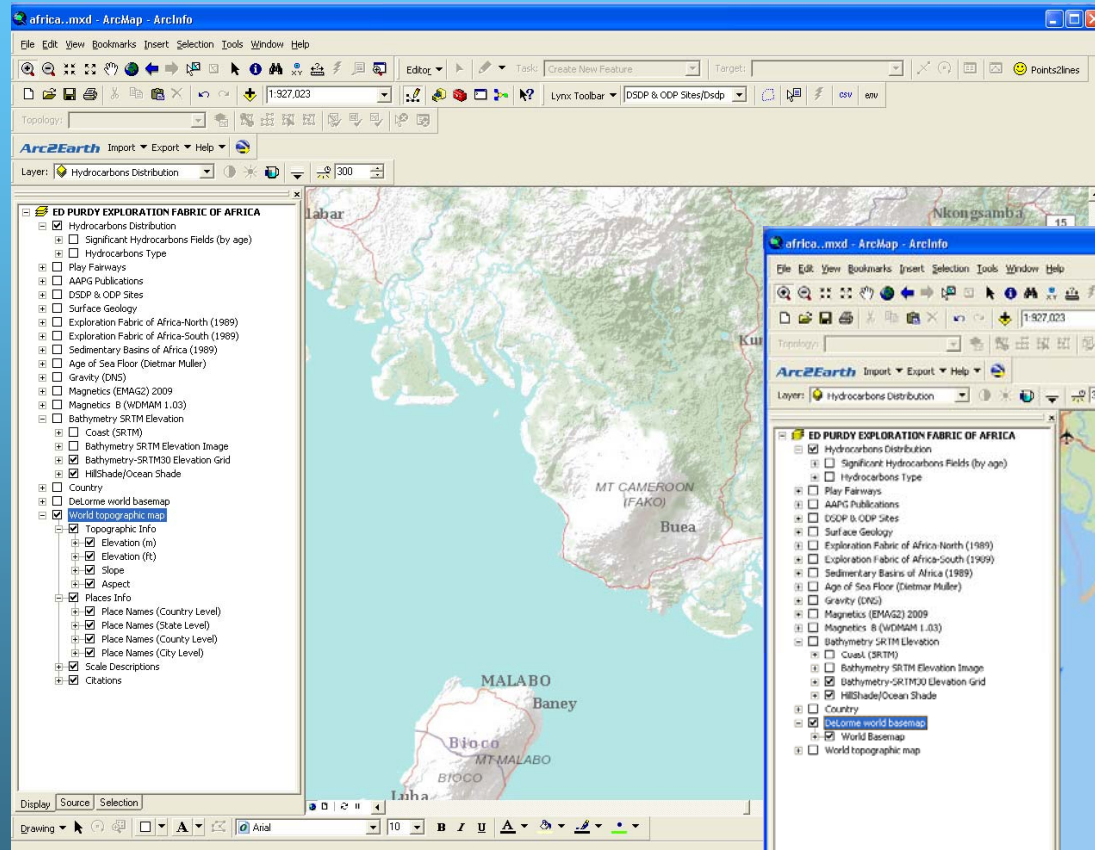


A wide variety of online cartographic basemap layers are available for direct inclusion into the project using the <Add data from ArcGIS Online> menu option (under File)

E G PURDY EXPLORATION FABRIC OF AFRICA

FINAL GIS VERSION EFA V3.2

ONLINE CARTOGRAPHIC BASEMAP LAYERS



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 INTERNET BROWSER INTERACTIVE MAP

Exploration Fabric of Africa - Windows Internet Explorer

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EFA EXPLORATION FABRIC OF AFRICA MAPS AND GIS
E.G. PURDY MEMORIAL PROJECT

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Exploration GIS Sponsorship

The EFA project is sponsored by a number of companies with interest in Africa. Financial contributions from sponsors are being used to prepare the Exploration GIS, the Interactive Internet map, hardcopy maps and other digital output. In return sponsors will have unrestricted use the GIS, all hardcopy and digital products. Access to the GIS is only available to sponsors. This final GIS will be completed during March 2012, prior to that time a number of beta versions and other digital files will be available for download via the sponsor area on this web site. EFA sponsorship is still available to new companies and organisations.

The EFA Team gratefully acknowledges the sponsorship and support of the following companies: AAPG, AFREN, BP, CGG-VERITAS, CHEVRON, EXXONMOBIL, FUGRO, HANNO RESOURCES, HESS, ION, LYNX, MAERSK MARATHON, NEXEN, NIPPON, PGS, RWE, SERICA, SIPETROL, STATOIL, SVENSKA, TGS, TOTAL, TULLOW and UNX ENERGY

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<http://www.efafrica.com/sponsors.php>

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Exploration Fabric of Africa - Windows Internet Explorer

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Connected as user [EFA61](#). Click here to Log Out.

To view the Online Version of the Exploration Fabric of Africa GIS [Click Here](#)

For help please feel free to [Contact Us](#)

Data download

Instructions: Click on an individual file on the left to download one file at a time.
Alternatively, check the checkboxes of multiple files you want to download and then choose a zip name (or leave with the random default) and select Download

You are currently in folder: [/EFA61/](#) Up a level

Name	Size	Added	Select files for multiple download (Check all) (Uncheck all)	Delete?
1 download_readme.txt	1KB	Jan 26 2011	<input type="checkbox"/>	
2 EFA_V1.1_beta.z01	648 MB	Jan 17 2011	<input type="checkbox"/>	
3 EFA_V1.1_beta.z02	648 MB	Jan 17 2011	<input type="checkbox"/>	
4 EFA_V1.1_beta.z03	648 MB	Jan 17 2011	<input type="checkbox"/>	
5 EFA_V1.1_beta.z04	648 MB	Jan 17 2011	<input type="checkbox"/>	
6 EFA_V1.1_beta.z05	648 MB	Jan 17 2011	<input type="checkbox"/>	
7 EFA_V1.1_beta.z06	648 MB	Jan 17 2011	<input type="checkbox"/>	
8 EFA_V1.1_beta.z07	648 MB	Jan 17 2011	<input type="checkbox"/>	
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10 SingleDownload	FOLDER	Jan 26 2011		

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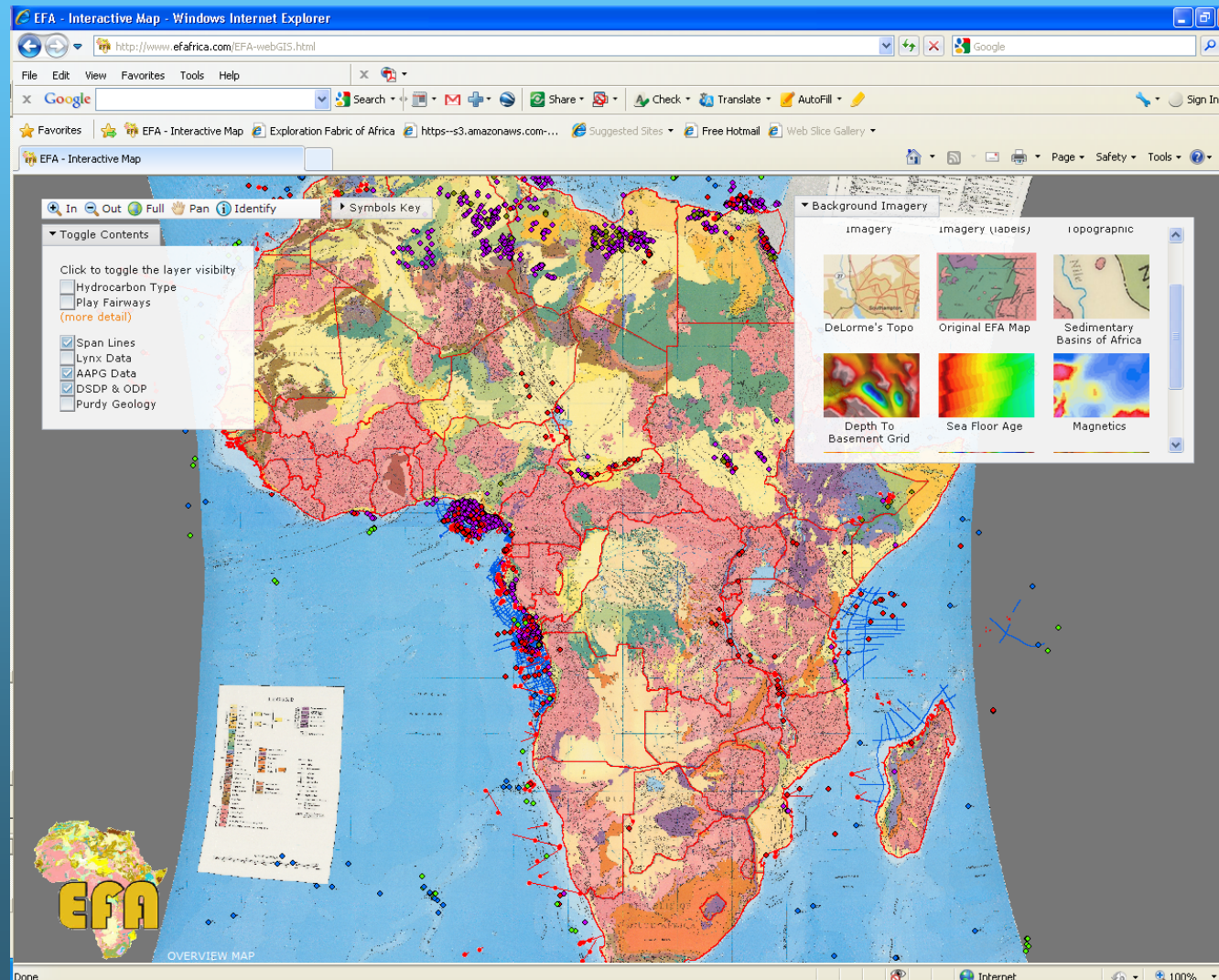
INTERNET BROWSER INTERACTIVE MAP

When the map is opened users will see a drop down list of currently available backgrounds for the map on the right hand side of the display, click on the thumbnail of the required background, initially it may take a short time to display as it caches on the server at the beginning of each session, after that backgrounds will display immediately.

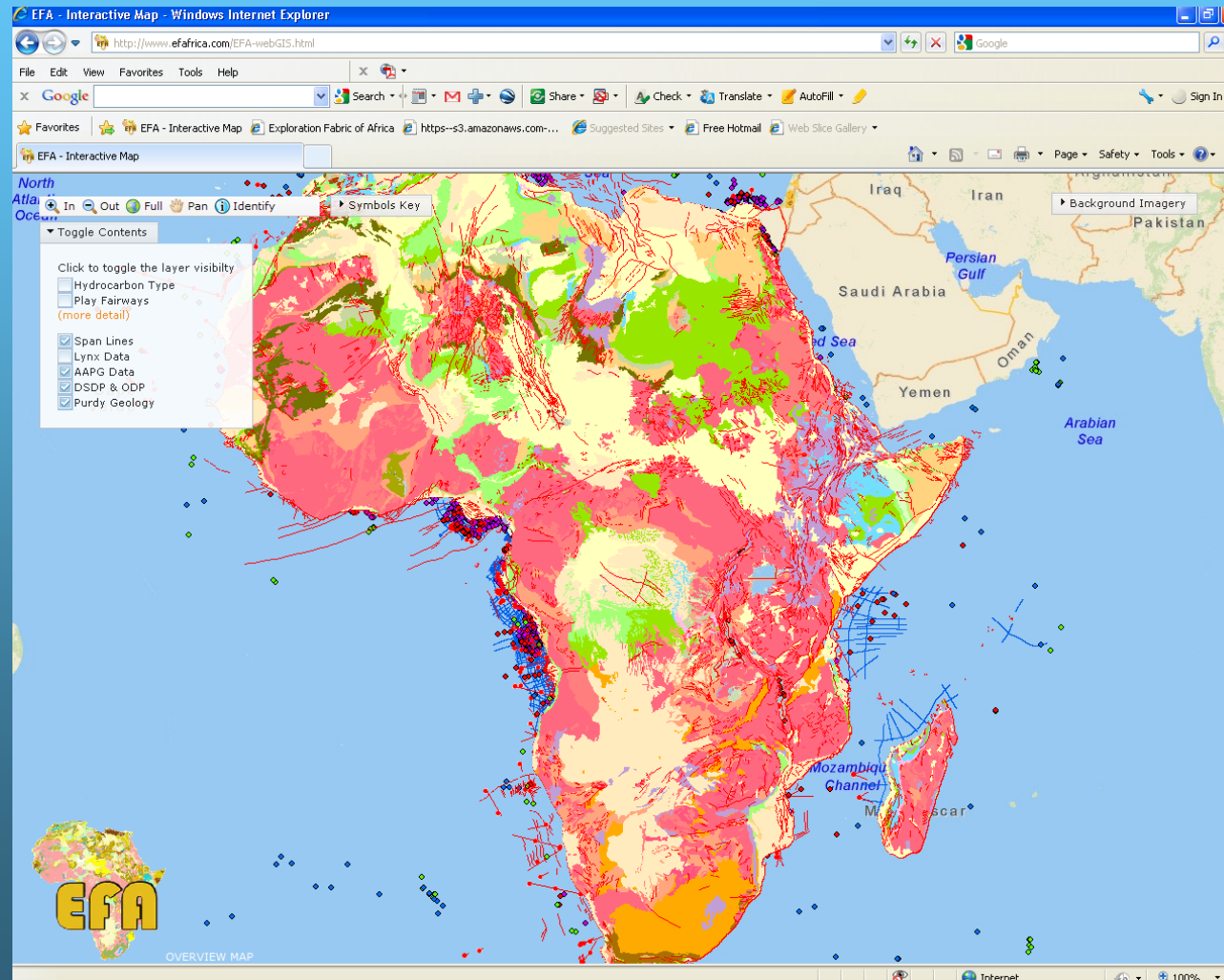
On the left hand side of the display users will see navigation and selection tools (Mag in, Mag out, Full, Pan and Identify). Beneath that toolbar is a drop down list of vector layers. This is only a small selection of what will eventually be available, and only a few have associated attributes at this time. So for example if users want to see the Purdy Geology, click in the box and the map will display. There is a drop down Symbols Key which allows users to see the legends. Some layers e.g., AAPG have associated data. Activate that layer and zoom in, users will see red dots and lines which show locations of seismic images for Africa in AAPG publications. Click on them with the Identify cursor users will see an Identify Results Call Out Box, click the AAPG tab in it to see thumbnails of the seismic images and associated metadata (click on images to download). The purple dots are centroids of fields, if users click the identify cursor on these and click the fields tab the field name and a limited amount of associated information will be displayed. Click AAPG Data tab and users can search Search and Discovery, Pay-per-view or the Combined AAPG Archives (latter only if you are a subscriber). The field search is based solely on the field name and may not necessarily return any hits. If there are any hits they will be listed in the scroll down list, clicking on the title will download the article. In onshore areas users can also search on the county name, and this will shortly be extended to searching on basin name. The DSDP-ODP layer will connect to NOAA or TAMU for further information on the sites. The Play fairways will eventually have many more associated attributes as will the Purdy map. All the other tectonic and geologic layers are due to be added in the next release. Users can also display the Plays in a new window, in this case users can toggle plays on and off according to age. Close that window to go back to the main map.

Sometimes users may experience the situation whereby the Identify Call Out Box which is static (at the moment) obscures other information or tools, in this case use the pan tool (or click and hold in the map) to move around

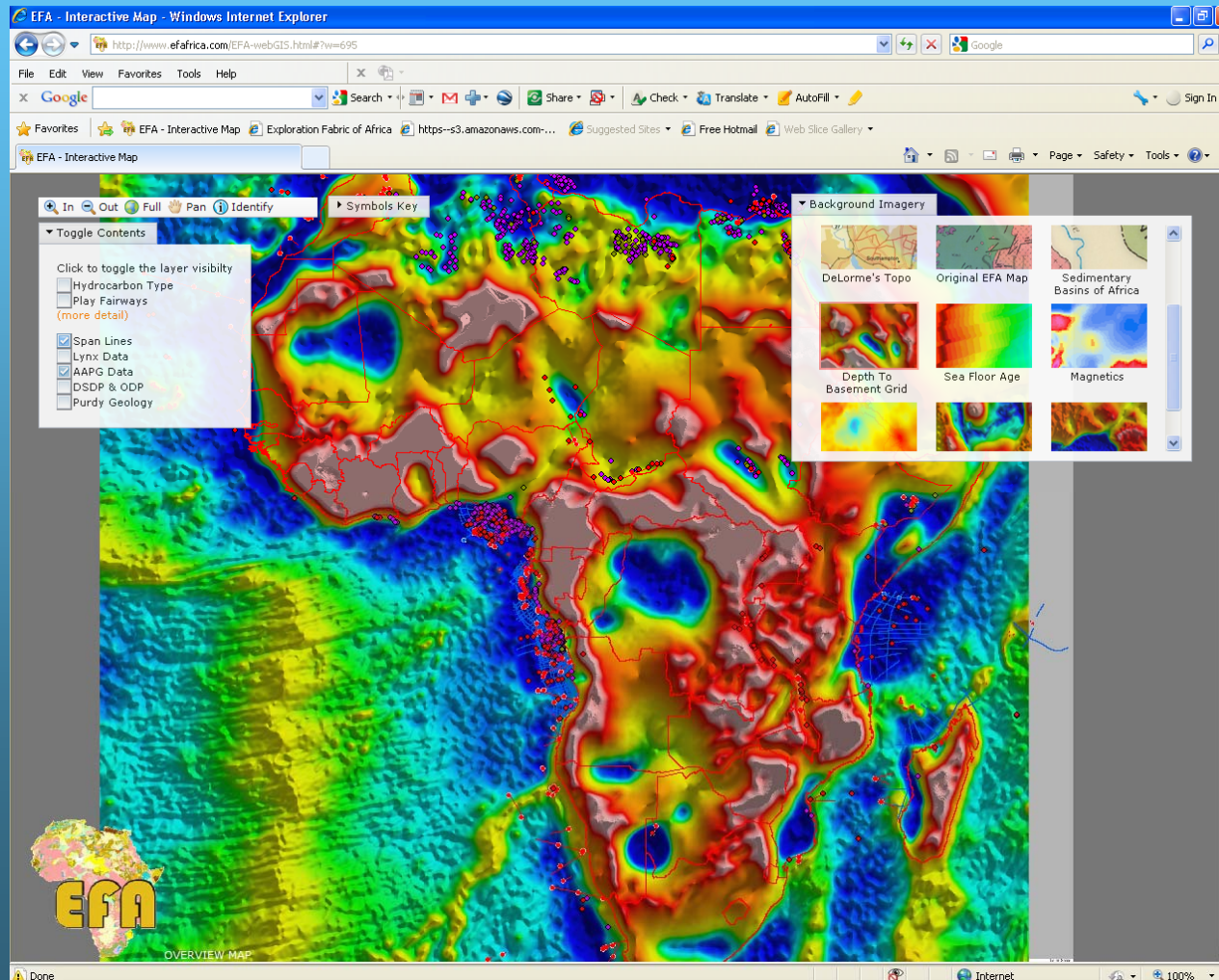
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 ONLINE INTERACTIVE MAPS FROM ARCGIS SERVER



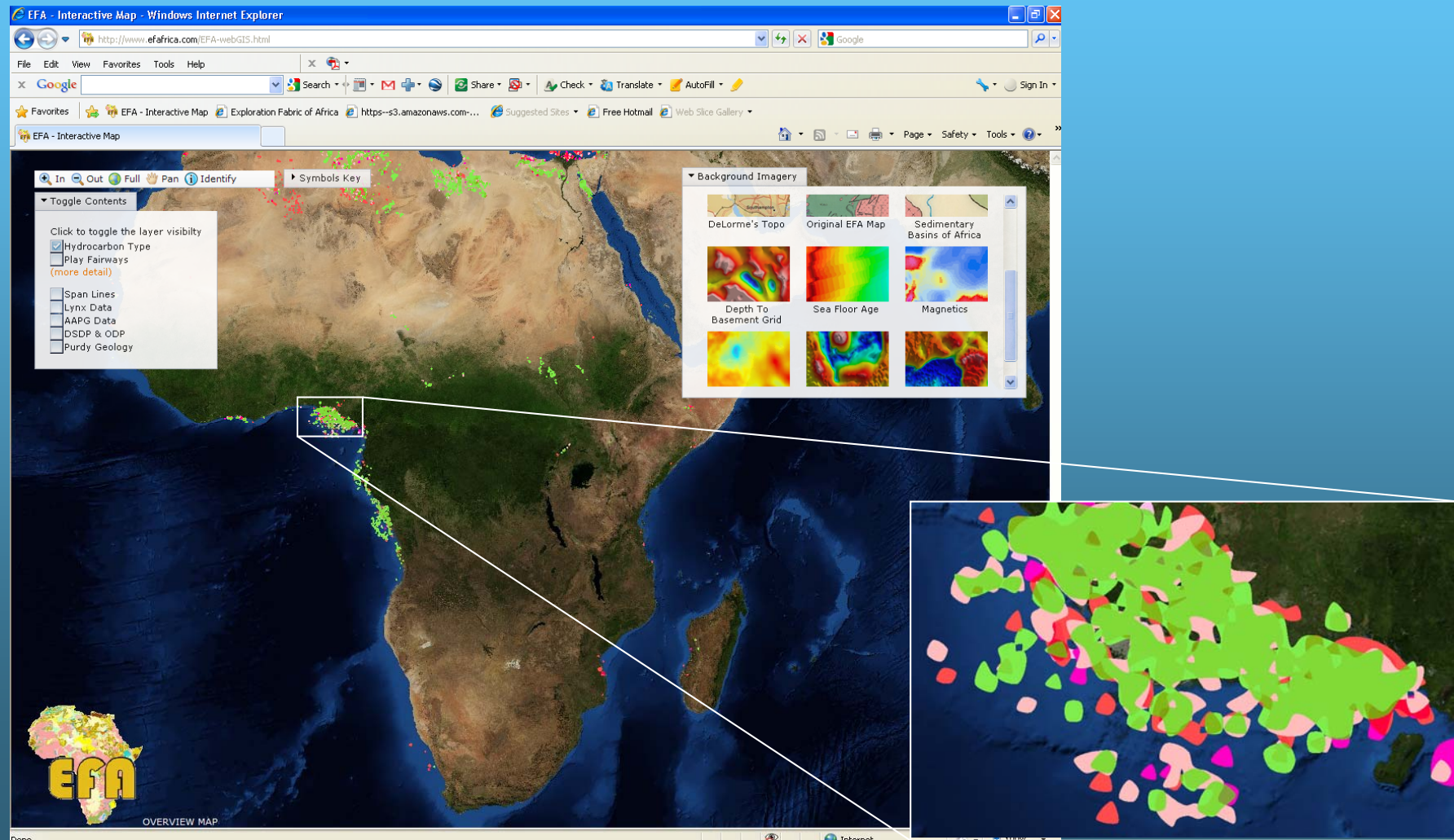
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 ONLINE INTERACTIVE MAP FROM ARCGIS SERVER



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 ONLINE INTERACTIVE MAP FROM ARCGIS SERVER



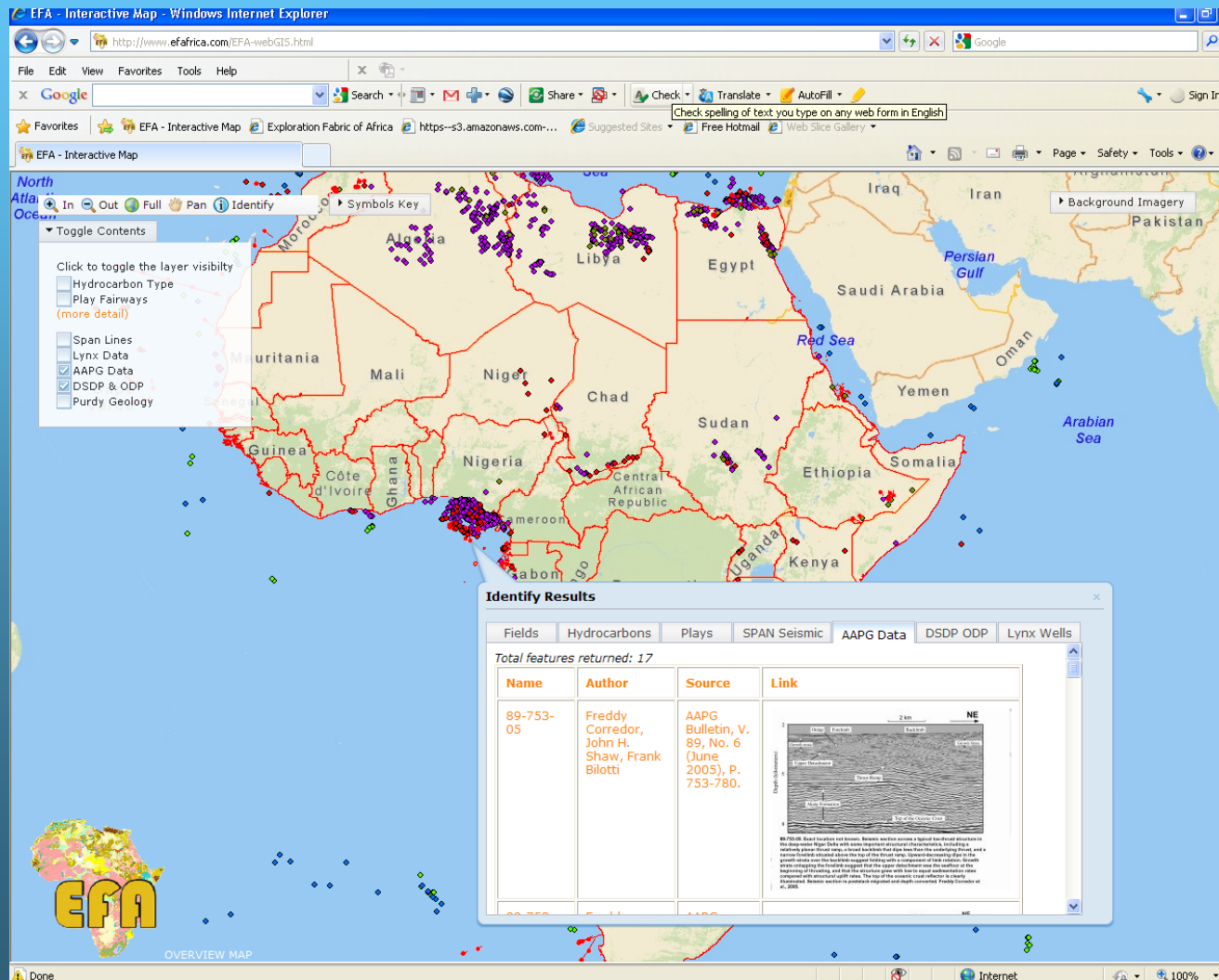
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2 ONLINE INTERACTIVE MAP FROM ARCGIS SERVER



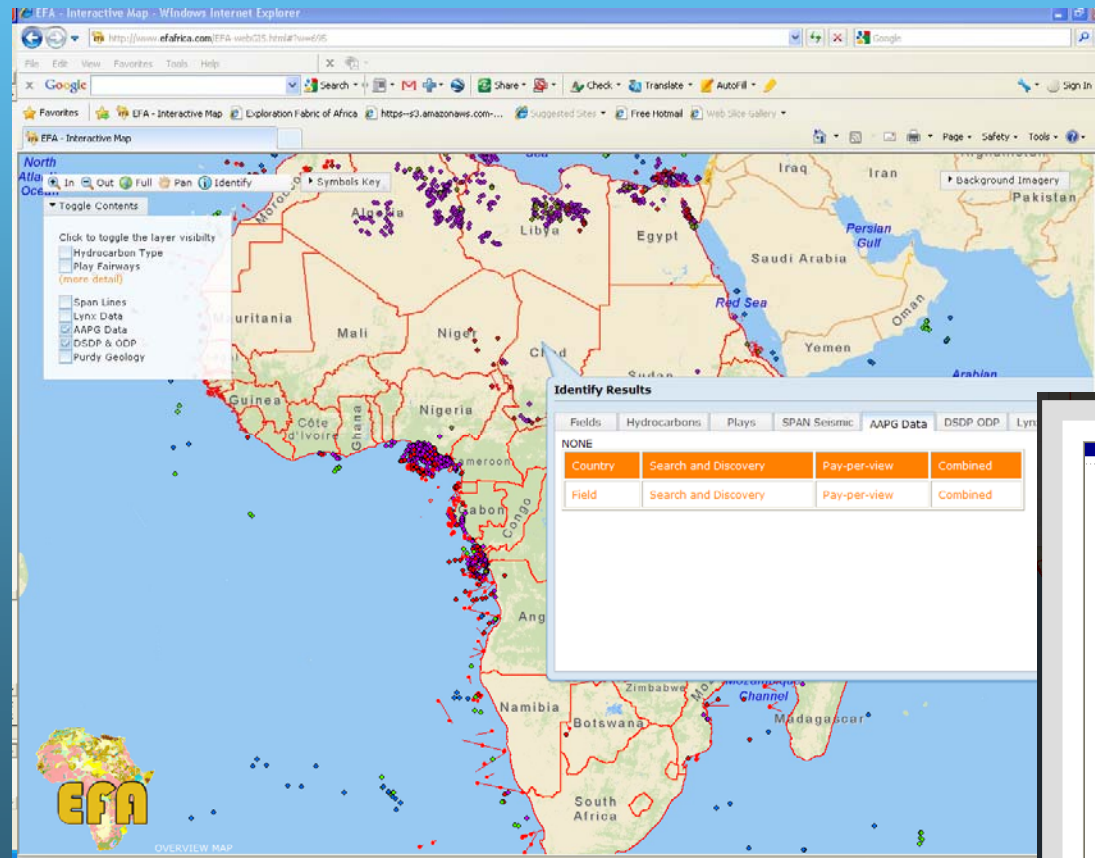
E G PURDY EXPLORATION FABRIC OF AFRICA

FINAL GIS VERSION EFA V3.2

ONLINE INTERACTIVE MAP FROM ARCGIS SERVER



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Matched 8 articles out of 65027 available articles.

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Title	Author	Year	Type
ABSTRACT: IMPROVED CHARACTERIZATION OF KEROGEN IN ORGANICPOOR SHALES USING FLUORESCENCE MICROSCOPY: AN EXAMPLE FROM THE CHAD BASIN, NE NIGERIA	B. Alalade, R.V. Tyson	2006	The Society for Organic Petrology
THE CRETACEOUS SERIES IN THE CHAD BASIN, NE NIGERIA: SOURCE ROCK POTENTIAL AND THERMAL MATURITY		1997	Journal of Petroleum Geology

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GEOLOGICAL MAPS

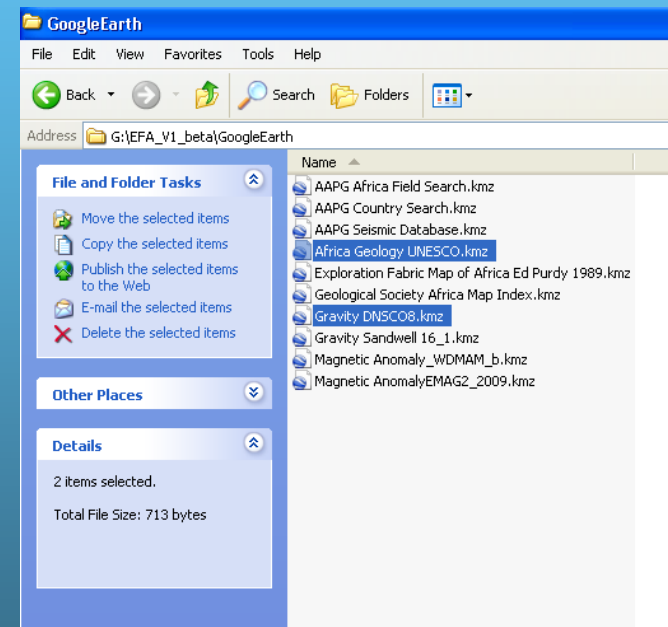
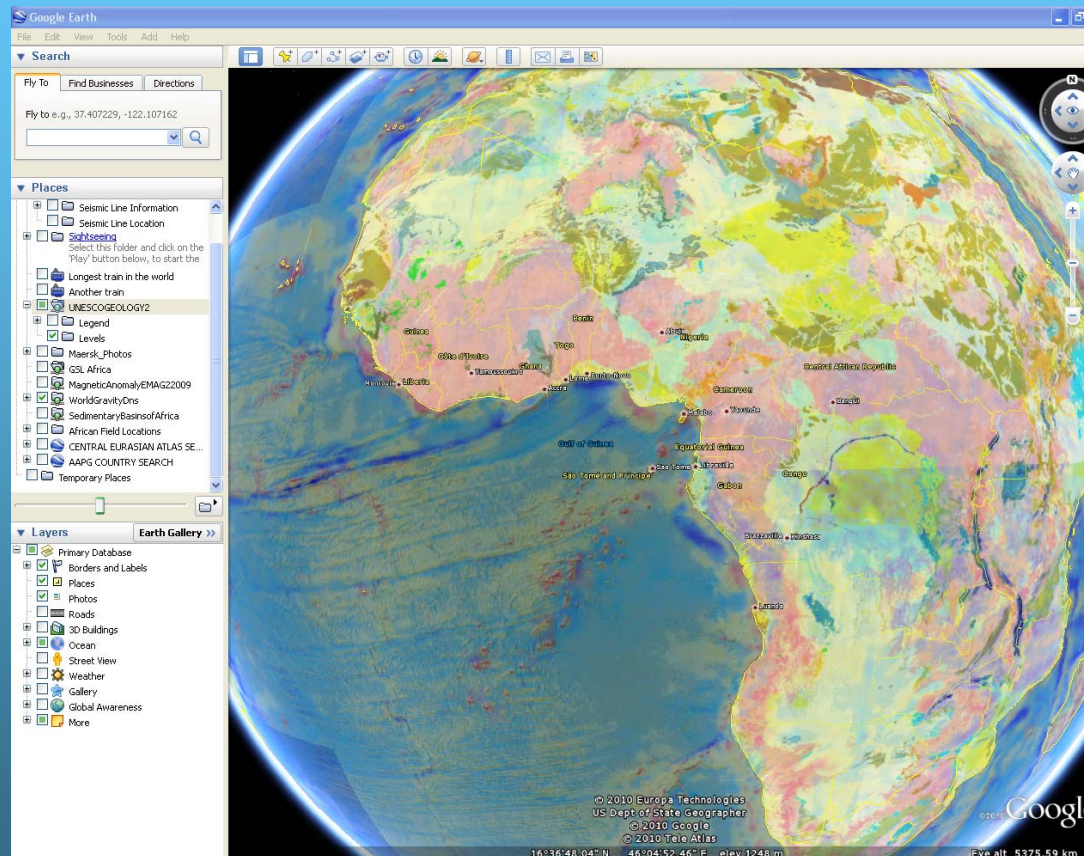
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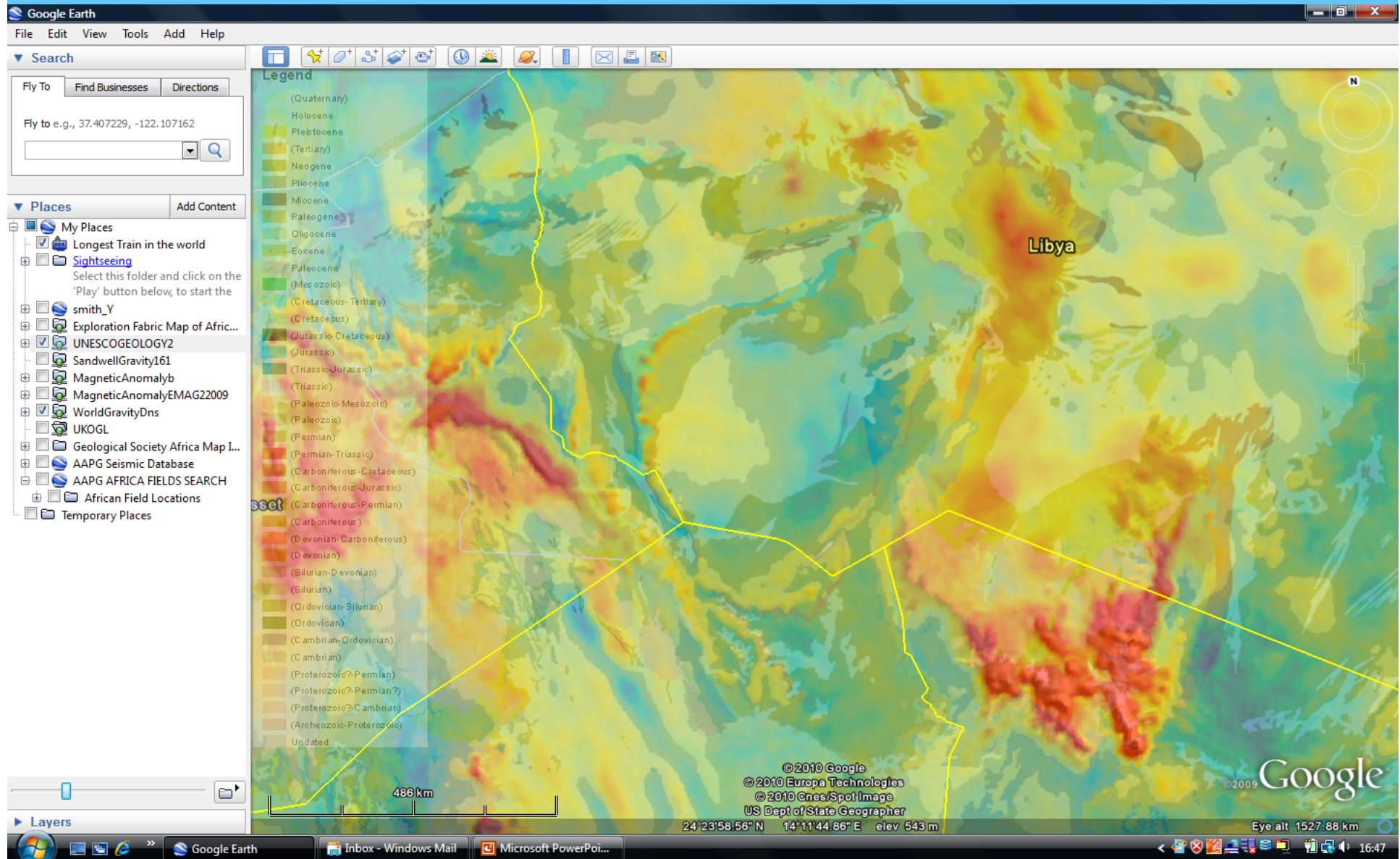
E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

GOOGLE EARTH KMZ FILES



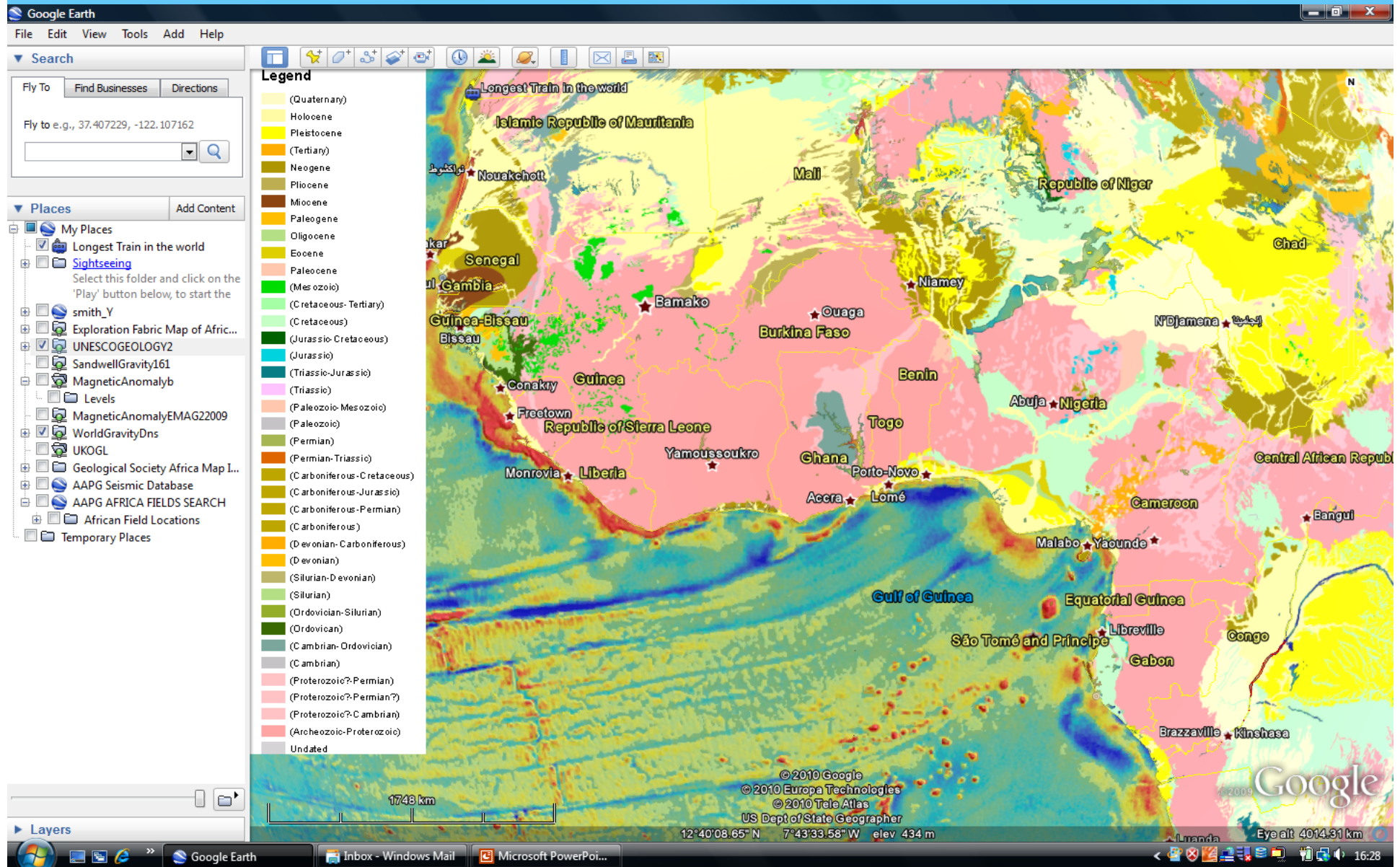
Google Earth kmz files for all GIS layers will be provided. In this beta version a small number of preliminary kmz files are included. These can be dragged on to the Google Earth globe or double-clicked in order to display them in Google Earth. Layers can be displayed individually or overlaid with varying degrees of transparency. Some kmz files have also been designed to allow hyperlinks and searching of AAPG publications

E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



E G PURDY EXPLORATION FABRIC OF AFRICA

FINAL GIS VERSION EFA V3.2



E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

The screenshot displays the Google Earth interface with the Exploration Fabric of Africa (EFA V3.2) loaded. The map shows North Africa, with Tunisia and Algeria visible. Numerous red cross markers indicate exploration points. A popup window is open for a specific point, providing detailed information:

NAME:	Hassi R'Mel
ERA:	Mesozoic
PERIOD:	Triassic
EPOCH:	Upper Triassic
AGE NAME:	Rhaetian
RESERVOIR NAME:	Hassi R'Mel Sandstone Unit
SHORT NAME:	Hassi R'Mel

Below the table, there are three links:

- [Find Field Search & Discovery](#)
- [Find Field AAPG Pay Per View](#)
- [Find Field AAPG Combined Search](#)

The left sidebar shows the 'Places' panel with a list of saved locations, including 'Longest Train in the world', 'Sightseeing', 'smith_Y', 'Exploration Fabric Map of Afric...', 'UNESCOGEOLOGY2', 'SandwellGravity161', 'MagneticAnomalyb', 'MagneticAnomalyEMAG22009', 'WorldGravityDns', 'UKOGL', 'Geological Society Africa Map I...', 'AAPG Seismic Database', 'AAPG AFRICA FIELDS SEARCH', 'African Field Locations', and 'Temporary Places'. The bottom status bar shows the coordinates 32°58'31.20"N, 3°19'09.00"E, an elevation of 722 m, and an eye altitude of 1527.88 km. The taskbar at the bottom includes icons for Google Earth, Windows Mail, and Microsoft PowerPoint.

E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2

The image displays a Google Earth interface with a map of Africa and the surrounding regions. Numerous red pins are scattered across the map, representing data points. A search results window is open in the bottom left, showing a list of articles. A data popup is visible in the center-right, providing details for a specific location.

Google Earth Interface:

- Search: Fly To, Find Businesses, Directions. Fly to e.g., 37.407229, -122.107162.
- Places: Add Content. July, July North.

Search Results (AAGP Datapages):

Matched 3 articles out of 106672 available articles.

Title	Author	Year	Type
Abstract: Mixed Carbonate - Siliciclastic Deposits in a Storm-Influenced Tidal Environment: Facies Control on Reservoir Quality in the Lower Bahariya Formation (Cenomanian), Khepri-Sethos fields, Western Desert, Egypt, by M. Hegazy and J. Melvin; #90942 (1997)		1997	Search and Discovery

Data Popup:

- NAME: Khepri
- ERA: Mesozoic
- PERIOD: Cretaceous
- EPOCH: Upper Cretaceous
- AGE NAME: Lower Cenomanian
- RESERVOIR NAME: Bahariya Formation
- SHORT NAME: Khepri

[Find Field Search & Discovery](#)
[Find Field AAPG Pay Per View](#)
[Find Field AAPG Combined Search](#)

Abstract: Mixed Carbonate - Siliciclastic Deposits in a Storm-Influenced Tidal Environment: Facies Control on Reservoir Quality in the Lower Bahariya Formation (Cenomanian), Khepri-Sethos fields, Western Desert, Egypt

HEGAZY, M., and J. MELVIN

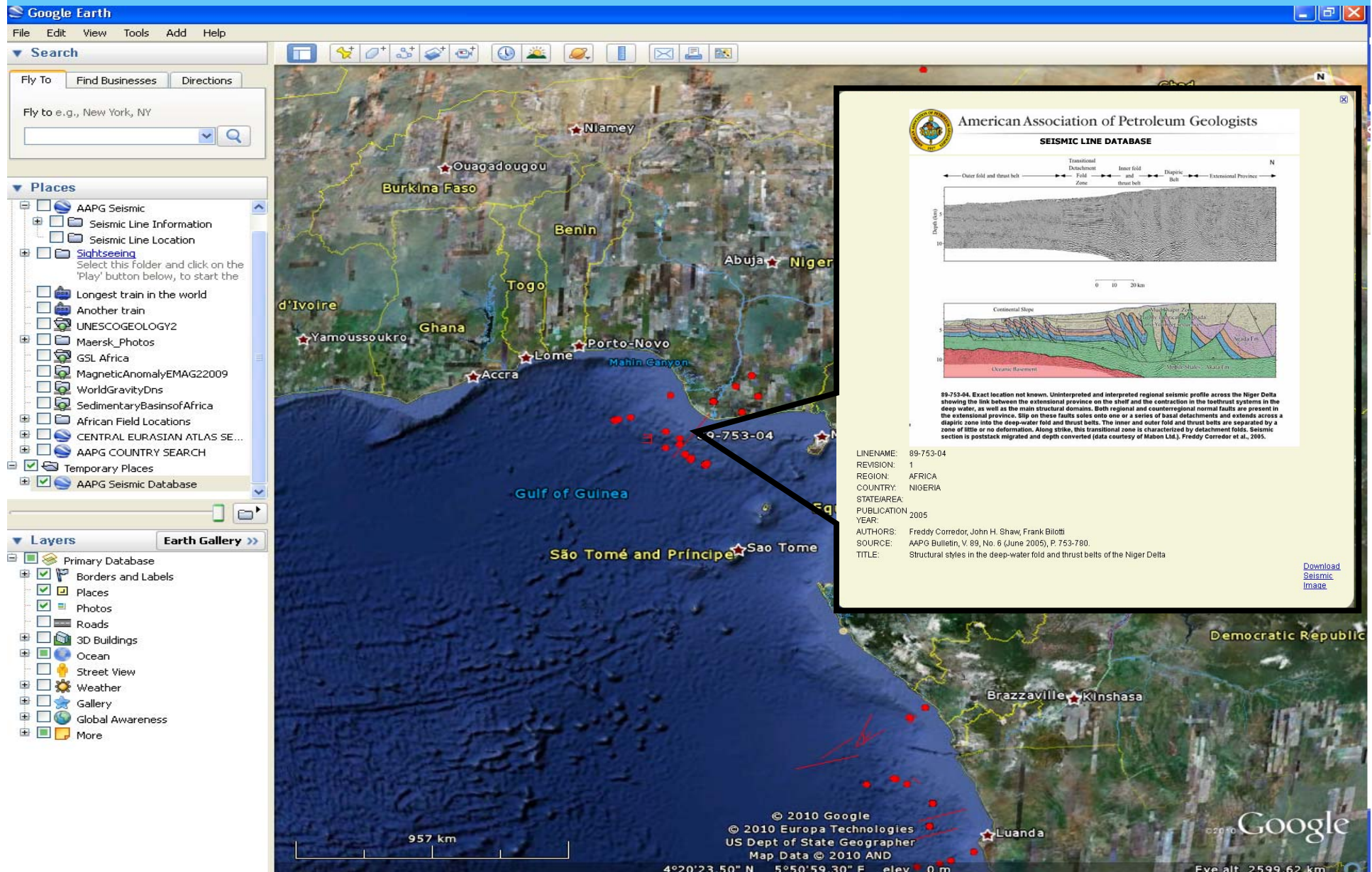
The lower Bahariya Formation (Cenomanian) at **Khepri** and Sethos fields (Western Desert, Egypt) was deposited in a marginal marine, tidally dominated environment. Facies analysis identifies a number of subenvironments whose dominance in the study area fluctuated

Petroleum Abstracts
The University of Tulsa

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 US Dept of State Geographer
 © 2010 Tele Atlas

01:50°N 19°07'35.21°E elev 588 m
 Eye alt 4295.41 km
 17:12

E G PURDY EXPLORATION FABRIC OF AFRICA FINAL GIS VERSION EFA V3.2



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APPENDIX NOTES ON GRAVITY-MAGNETIC INVERSION

The EFA Depth to Basement Project used spectral estimation to invert the Total Magnetic Intensity (TMI) and Free Air Gravity (FAFA) fields over the Africa area for depth to magnetic basement and depth to high density basement. Separate inversions were done for the magnetic and for the gravity data. These inversions were then combined. The technique used is described in the following papers:

Odegard, Mark E., William G. Dickson, Janice M. Christ, James W. Granath (2007) Lithological Inversion Using Gravity And Magnetic Data Integrated With Geological Information, extended abstract, 10th International Congress of The Brazilian Geophysical Society, Rio de Janeiro, Brazil.

Odegard, Mark E., Allan E. Kean, W. Robert Weber, Kirsten Fletcher and Mohammed Kidwai, (2005) Thickness, basement structure and tectonics from inversion and modeling over South America; extended abstract, 75thSEG meeting, Houston, Texas.

Odegard, M.E., W.R. Weber, D.D. Stavar, and W.G. Dickson (2004) Depth to basement using spectral inversion of magnetic and gravity data: Application to Northwest Africa and Brazil, extended abstract, Society of Exploration Geophysicists Annual Meeting, Denver.

The data used in the project were from all available public domain sources as well as some bathymetry data available only to GrizGeo.

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APPENDIX NOTES ON GRAVITY-MAGNETIC INVERSION

The inversion was performed over the following area:

30 degrees west to 55 degrees east longitude

45 degrees south to 40 degrees north latitude.

GeoTiff images including associated color bars in a shaded relief with equal-area colors were produced together with the corresponding contours from grids of the inverted data:

- *Basement Elevation relative to mean sea level*
- *Depth to Basement relative to the earth's surface*
- *Sediment Thickness (continental surface/ocean bottom to depth to basement)*

The images are provided as GeoTiffs with a 2 arc-minute (~4 kilometers at the equator) resolution. The actual data resolution is on the order of 30 kilometers. The constraining grid for the inversions came from the sediment thickness grid from public domain sources and from data provided by the Purdy Project. Data resolution is highly variable.

In areas with sediment thickness with bathymetry was less than one kilometer the constraining grid thickness was used since the magnetic and gravity data were not of sufficient resolution for an inversion.

Depth to basement in the Atlas Mountains for Morocco and other over-thrust areas the sediment thickness is incorrect since there are sediments under the thrust. The top of the thrust is basement and constrains this inversion.

In many areas inter-crustal and Moho magnetic and density anomalies were larger than the signals from the basement. The software was re-written to better constrain the inversion of the weaker basement signals.