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Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



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Satellite and DTM Geology of the Voltaian Basin

Airborne Geophysics Project

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Project Background

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- 3 Year Project; November 2005 to 2008
- Supported by the EU as part of the MSSP
- BGS working in collaboration with Fugro

- 3 visits by BGS team to Ghana (excl. workshop)
- 3 visits by GSD counterparts to the UK



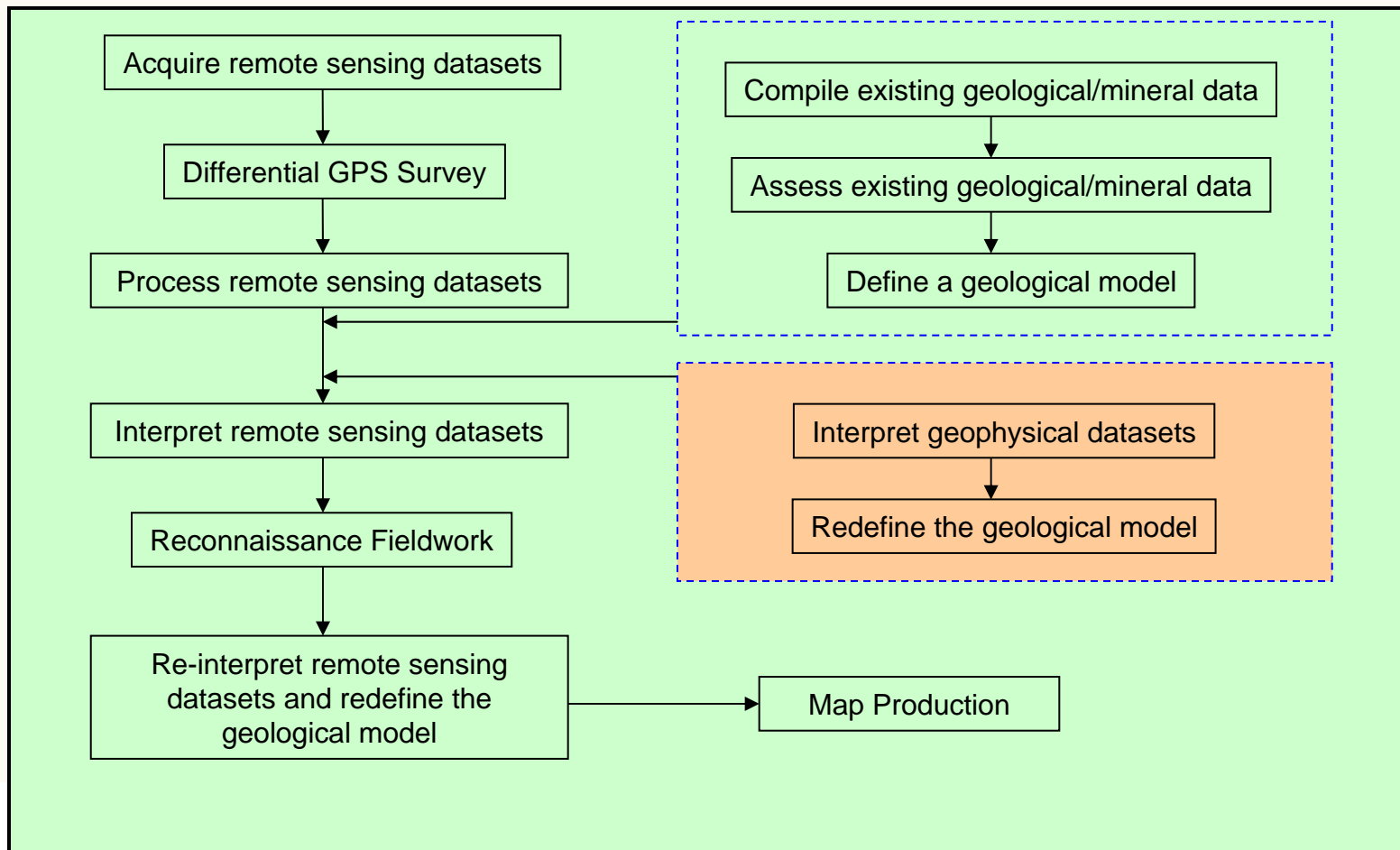
Outline

- Methodology
- Resources
 - GPS survey
 - Landsat TM and ETM
 - Digital Terrain Model (DTM)
 - Radarsat
 - Geophysical data
 - Previously published material
 - Fieldwork
- Outputs
 - Attributed GIS
 - Geology maps (including updated stratigraphy)
 - Topographic maps
 - Skilled GSD staff



Methodology

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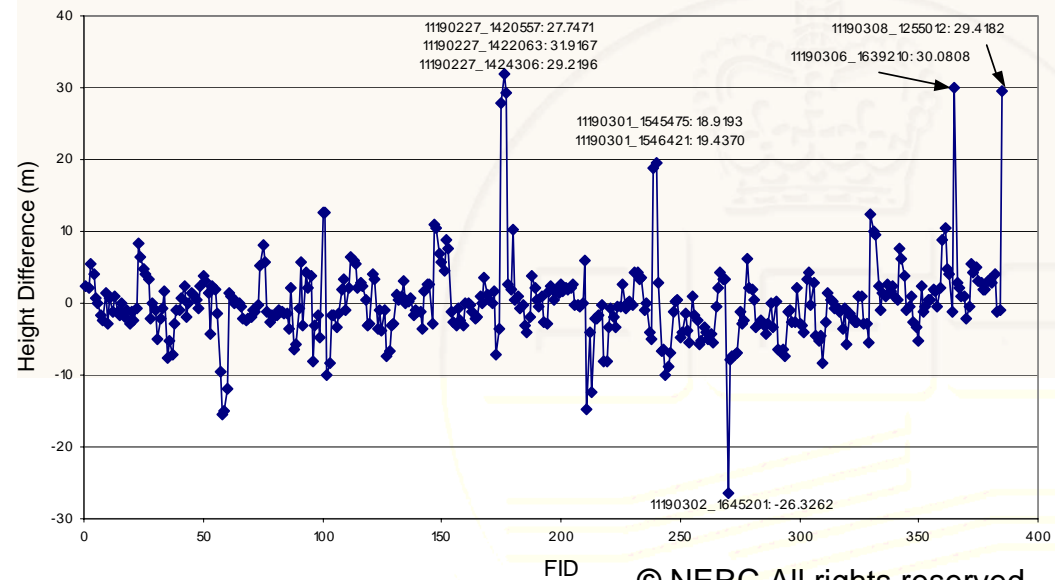
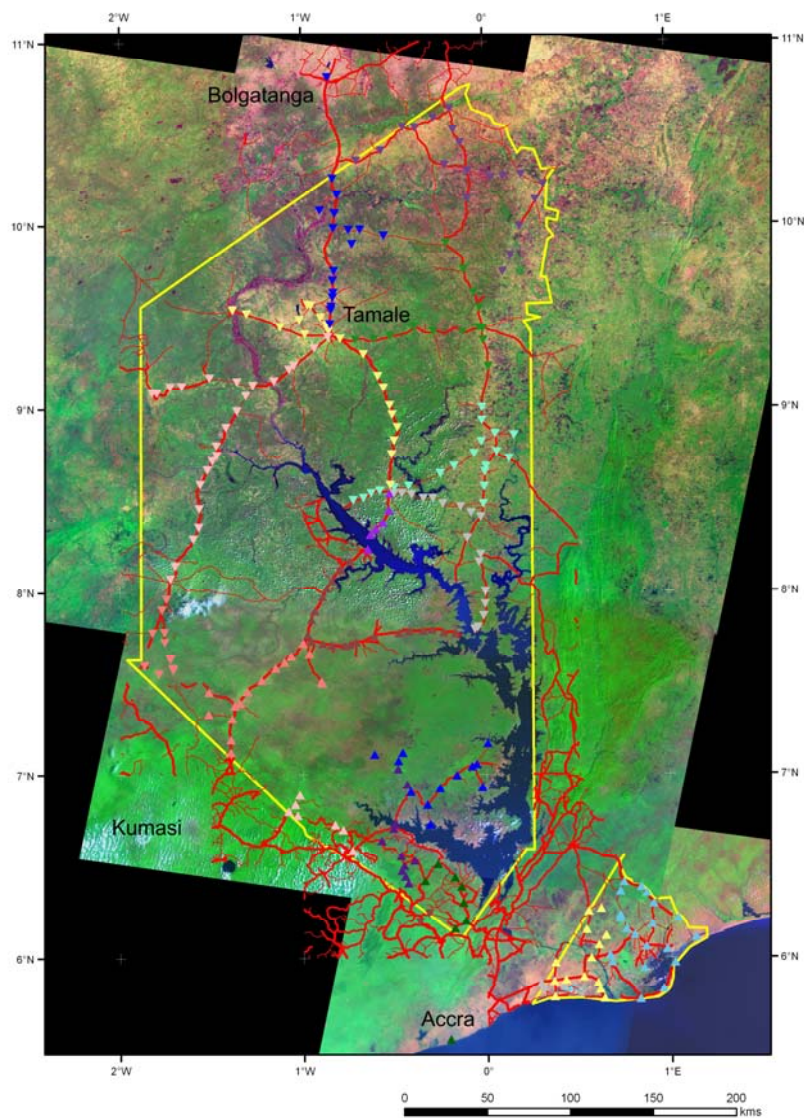


Differential GPS Survey

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Comparison between GPS and DTM height

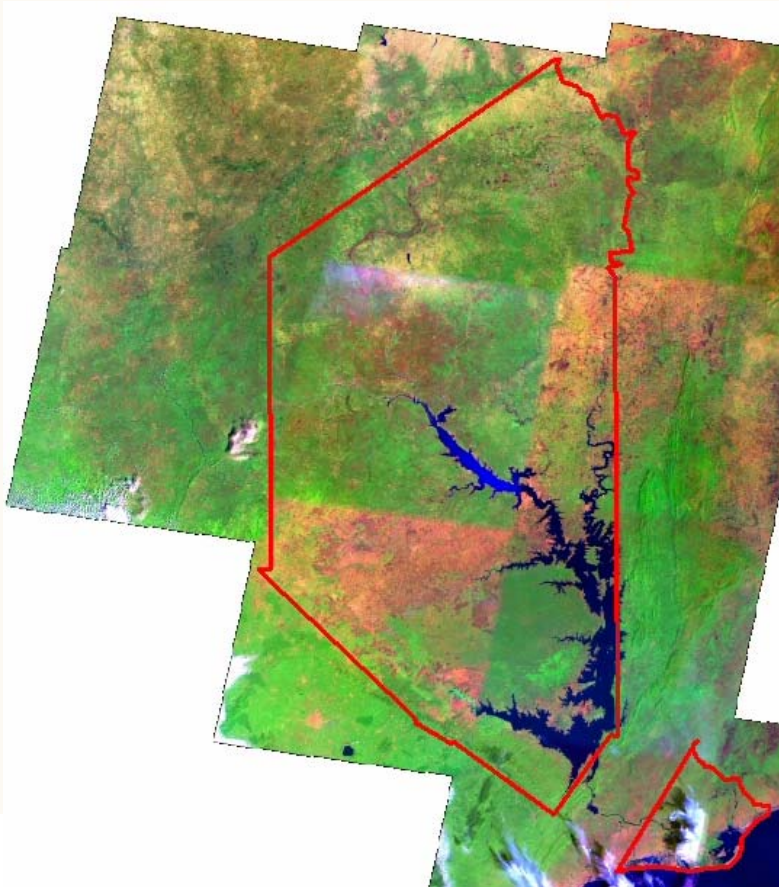


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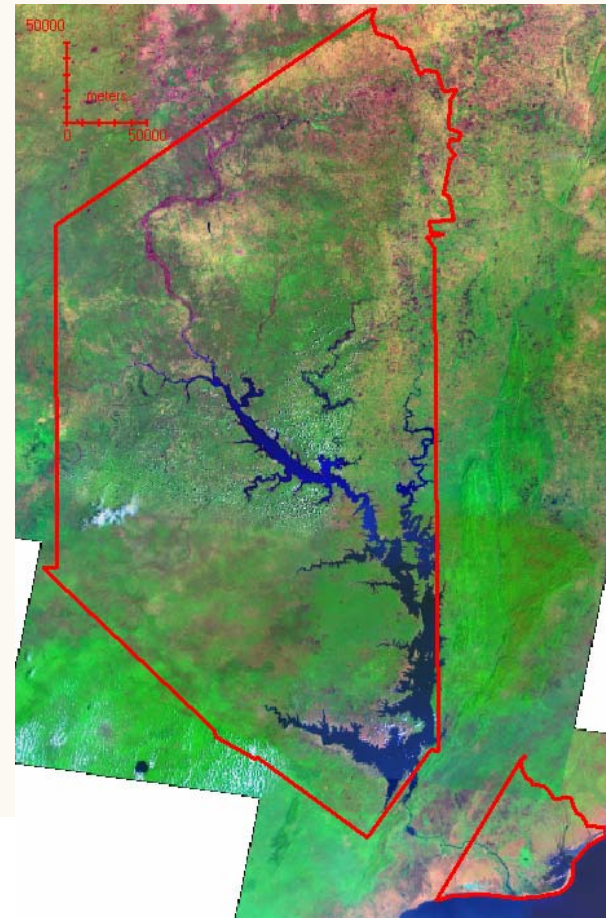
Remote Sensing Datasets

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Landsat TM (image dates 1986-1991)



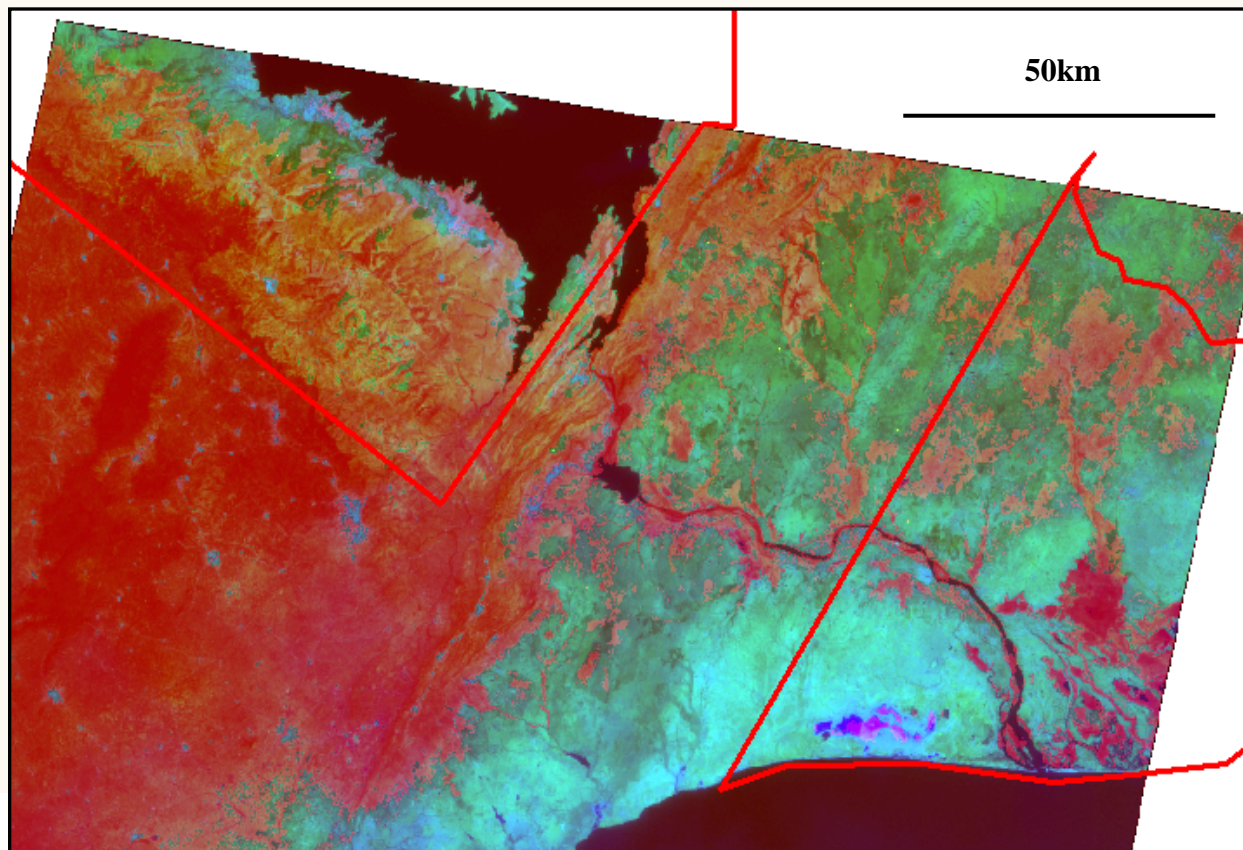
Landsat ETM (image dates 1999-2002)



Advanced Landsat Processing

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Mineral composite image

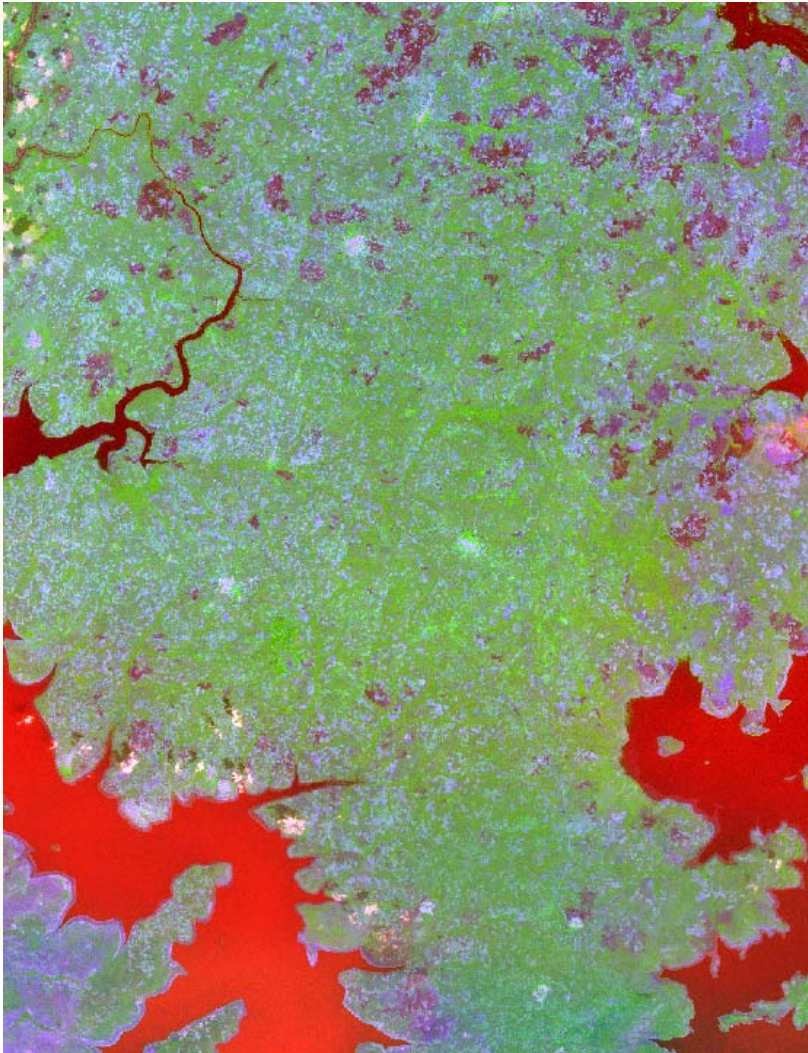


Red – ferrous (5/4)
Green – clay (5/7)
Blue – Iron oxide (3/1)



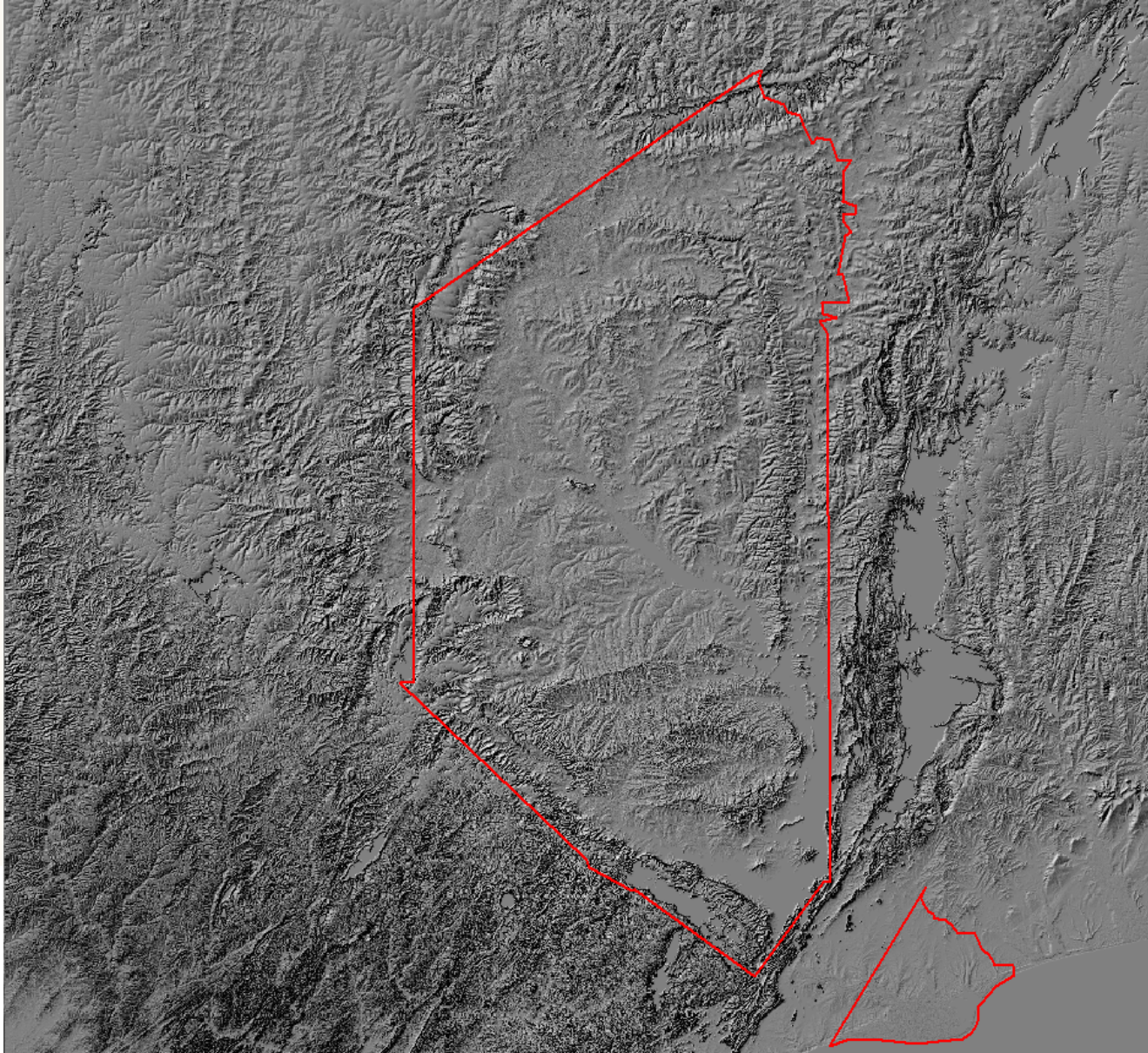
Superficial Interp from Landsat

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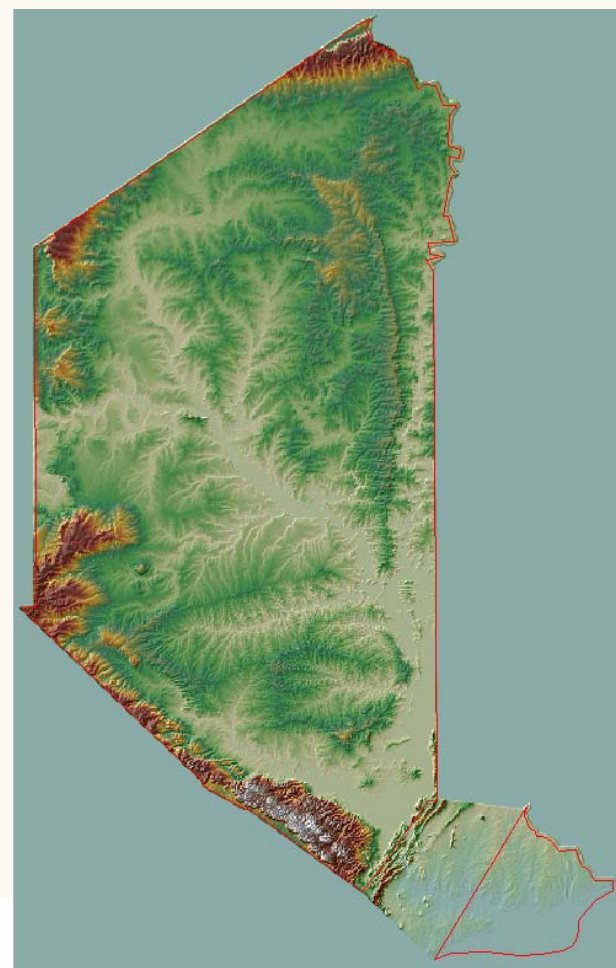
Digital Terrain Model (90m)

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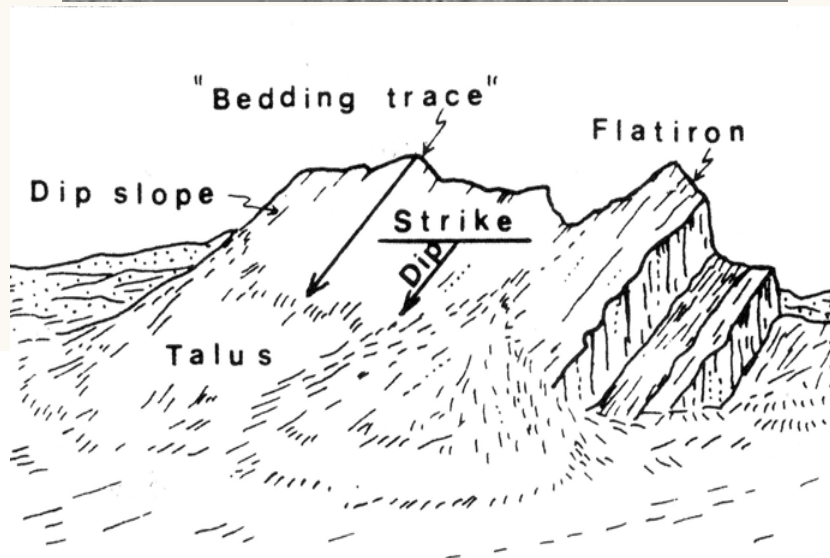
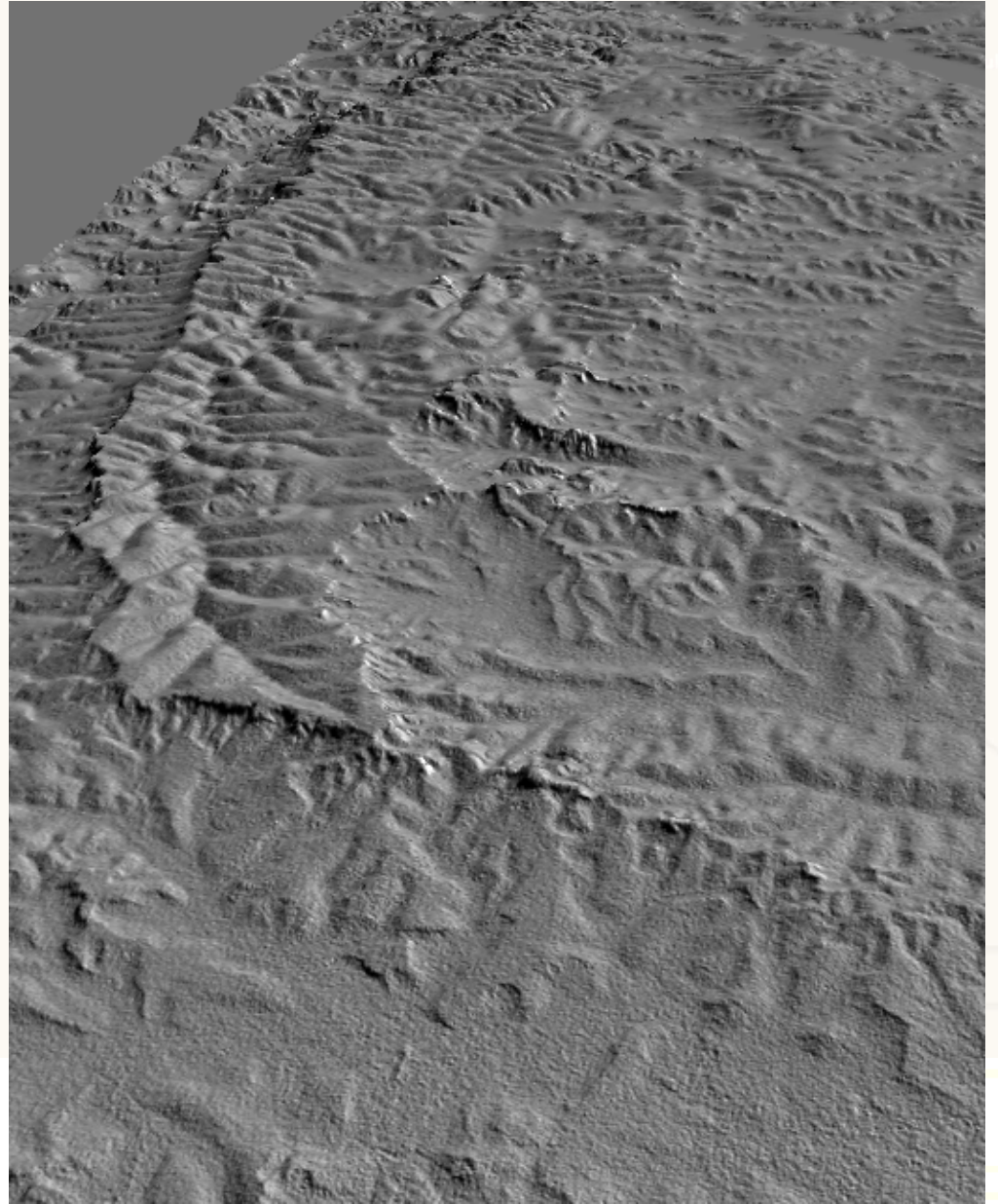
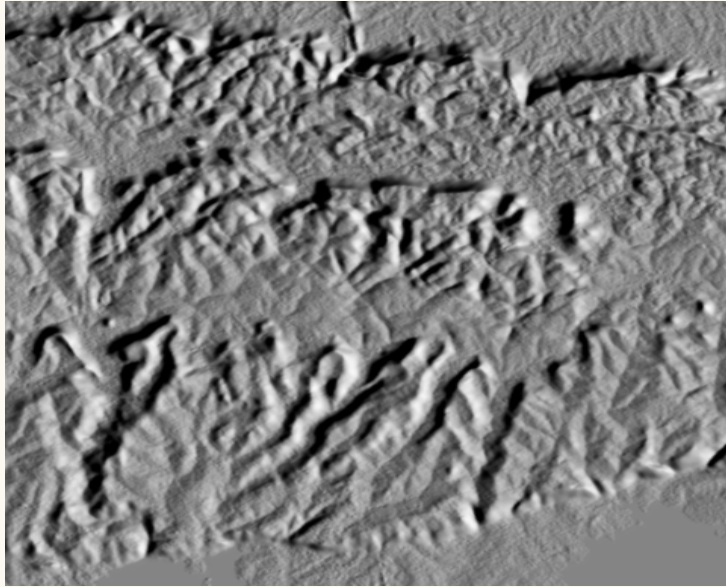


Digital Terrain Model 50m (selected views)

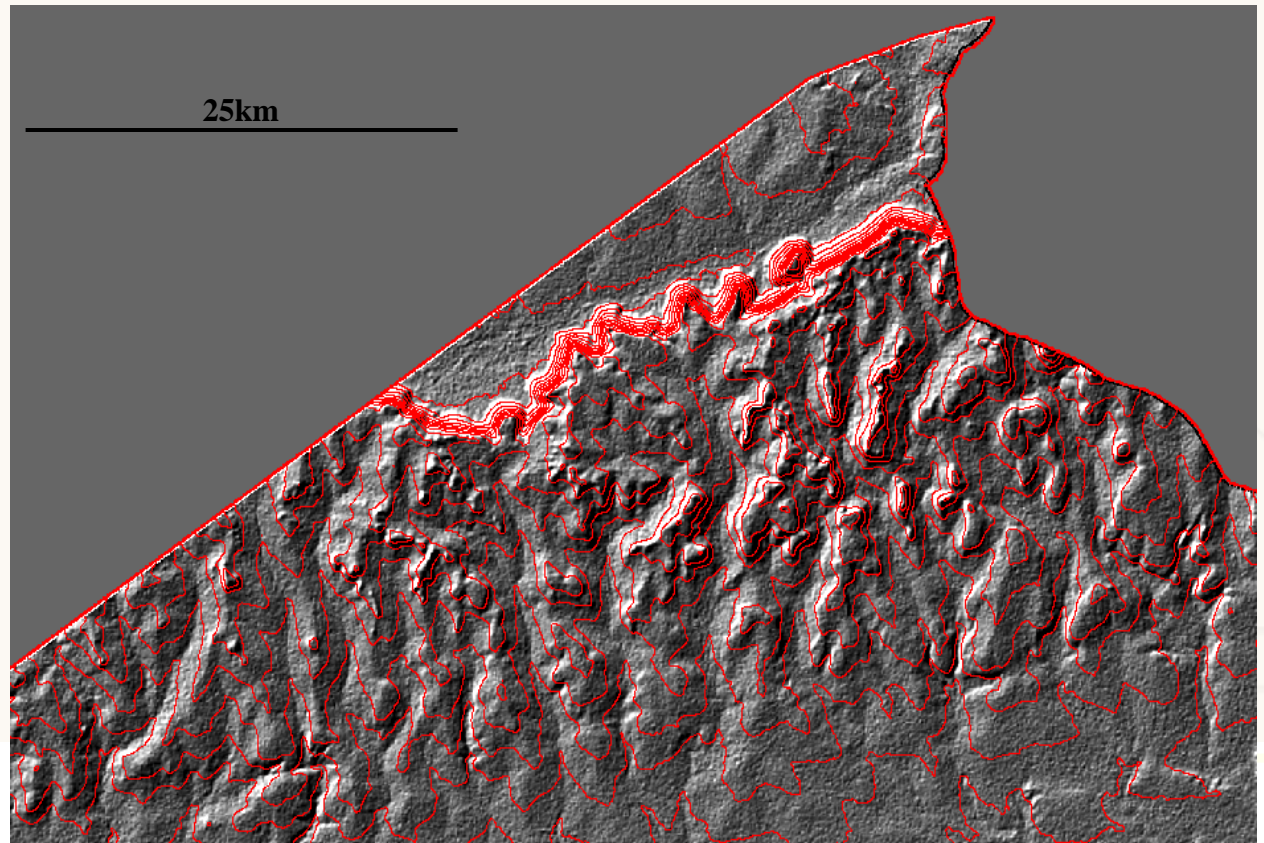
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'Feature' Mapping

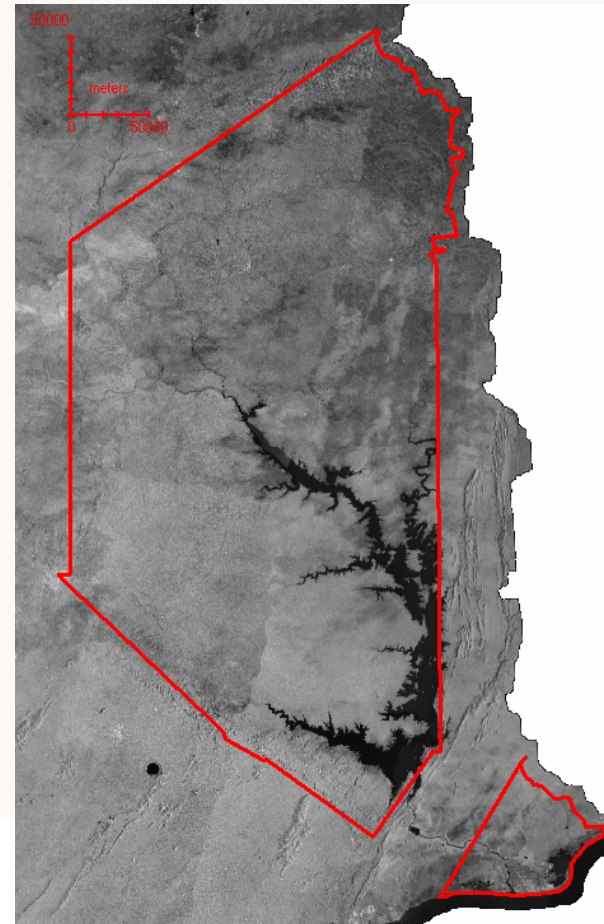
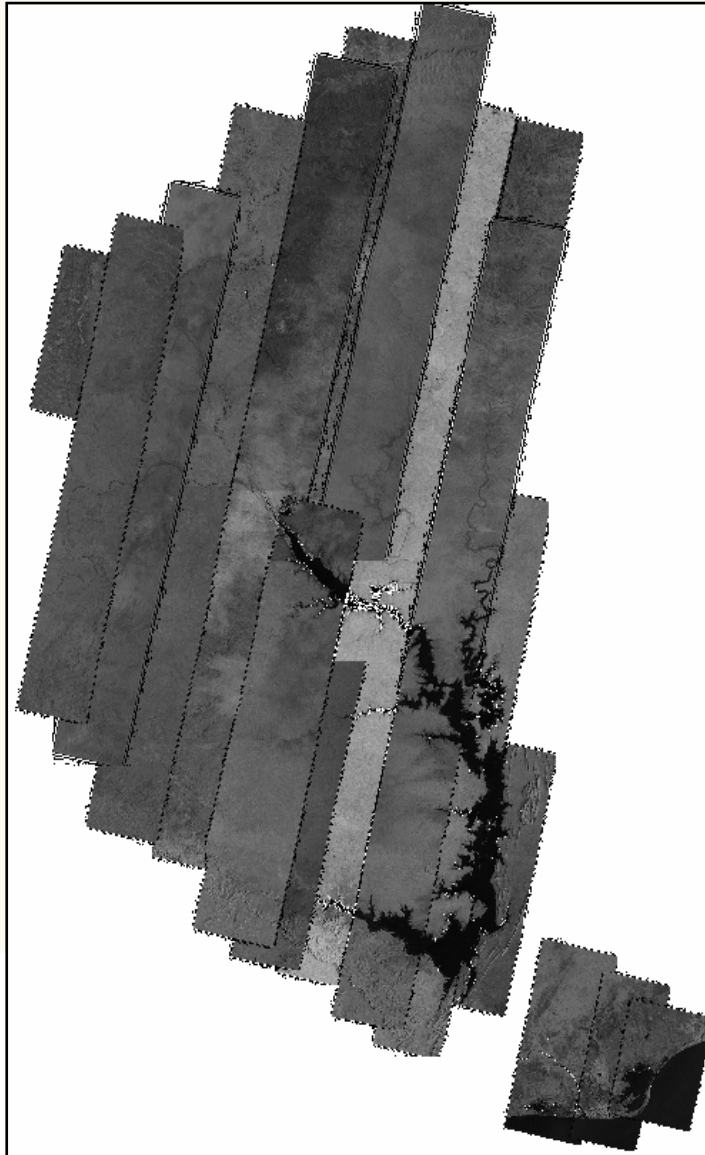


Outputs from the DTM



Radarsat Imagery

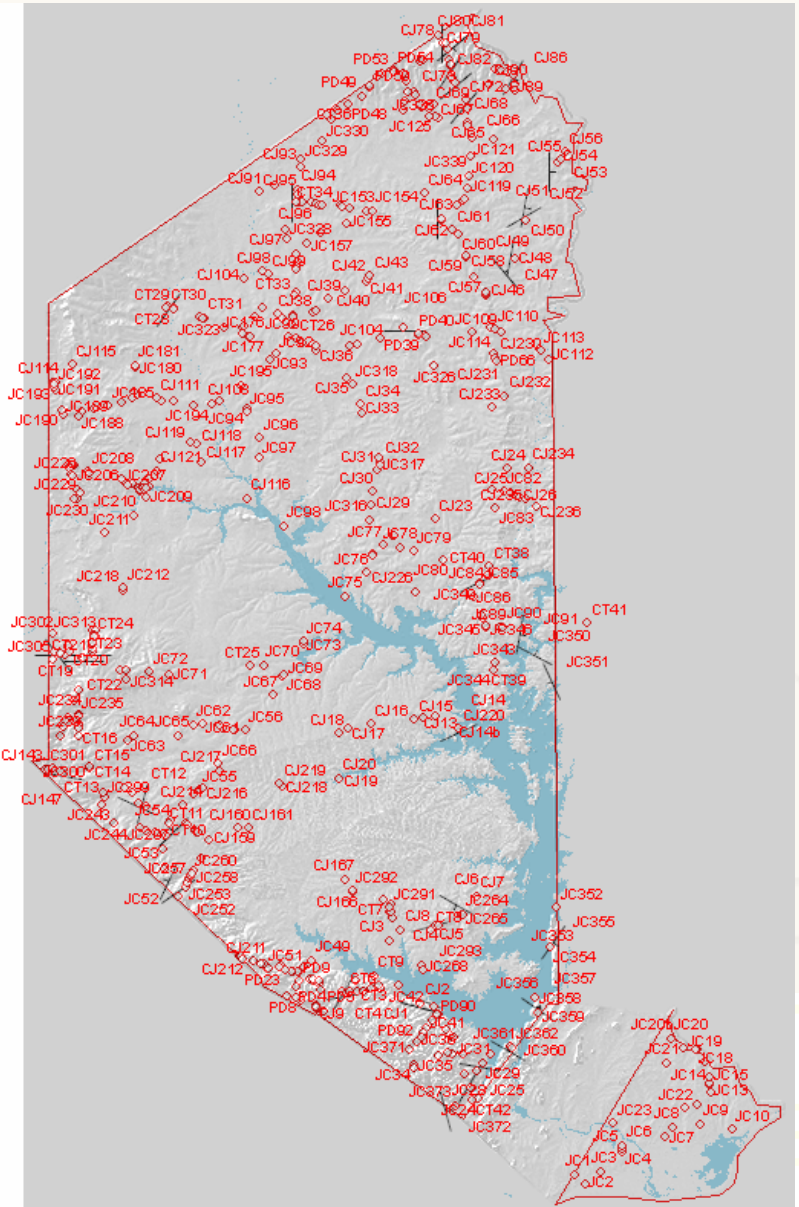
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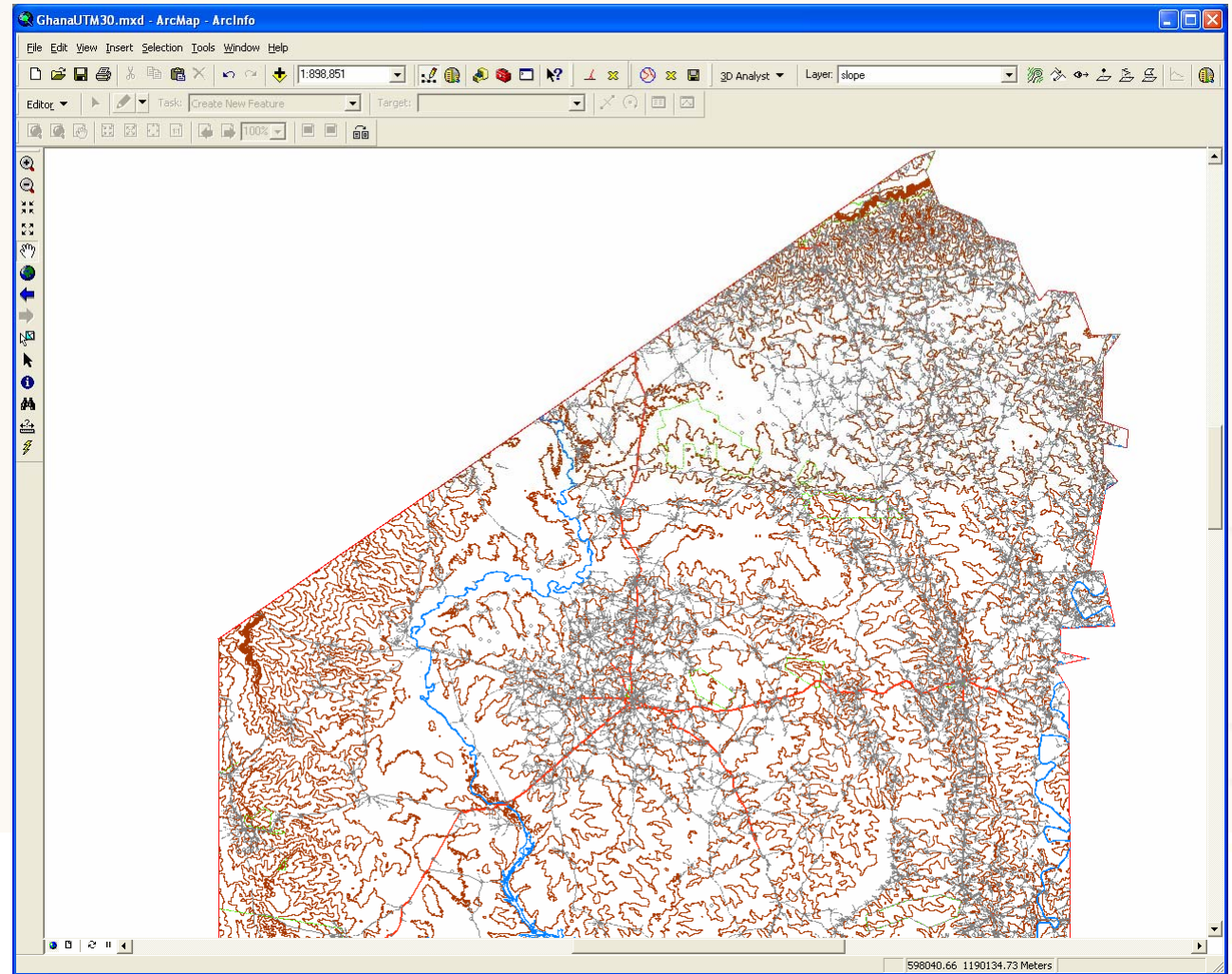
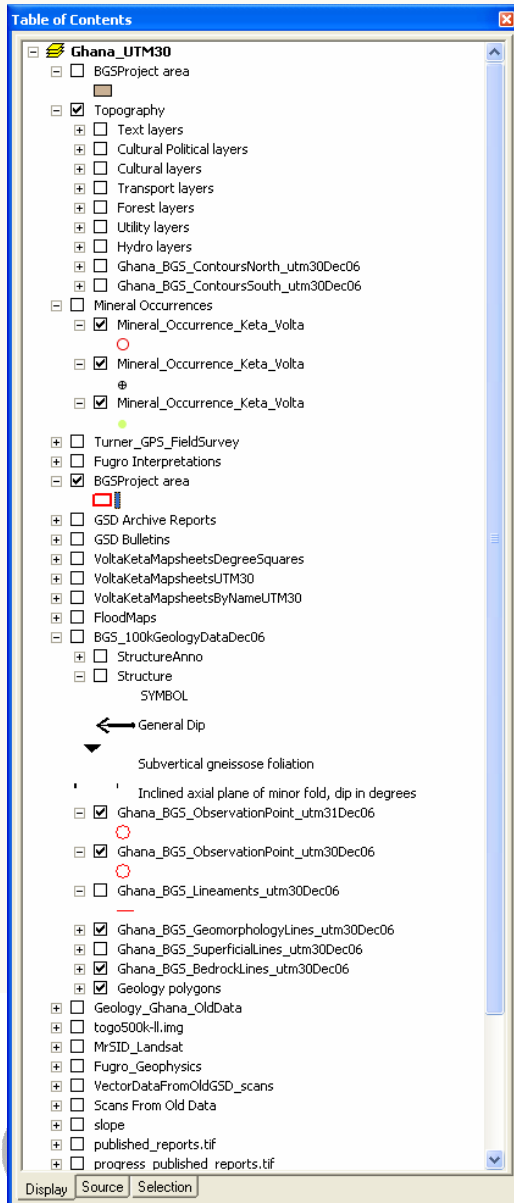
Fieldwork

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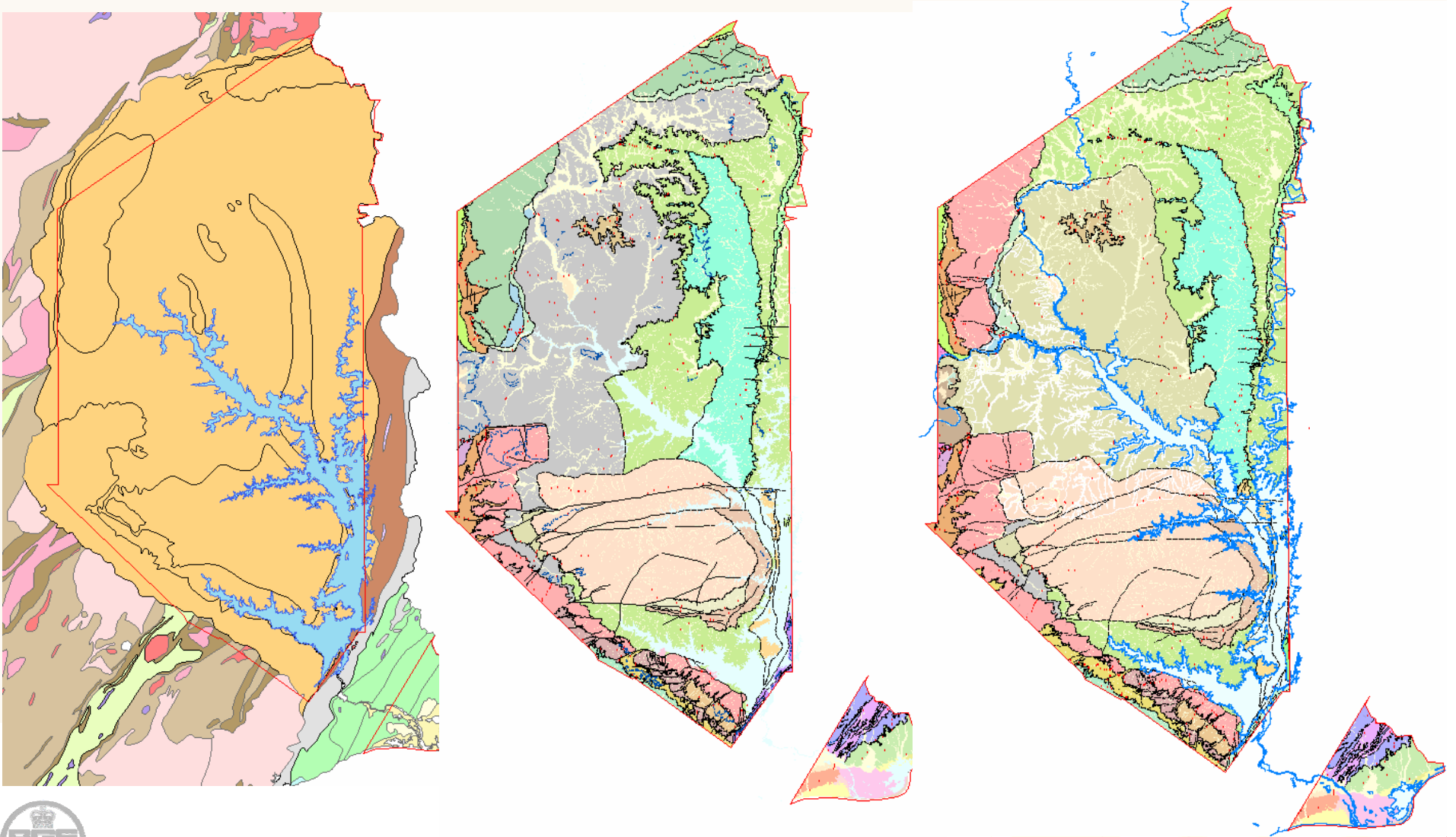
Attributed GIS

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Updated Geological Map

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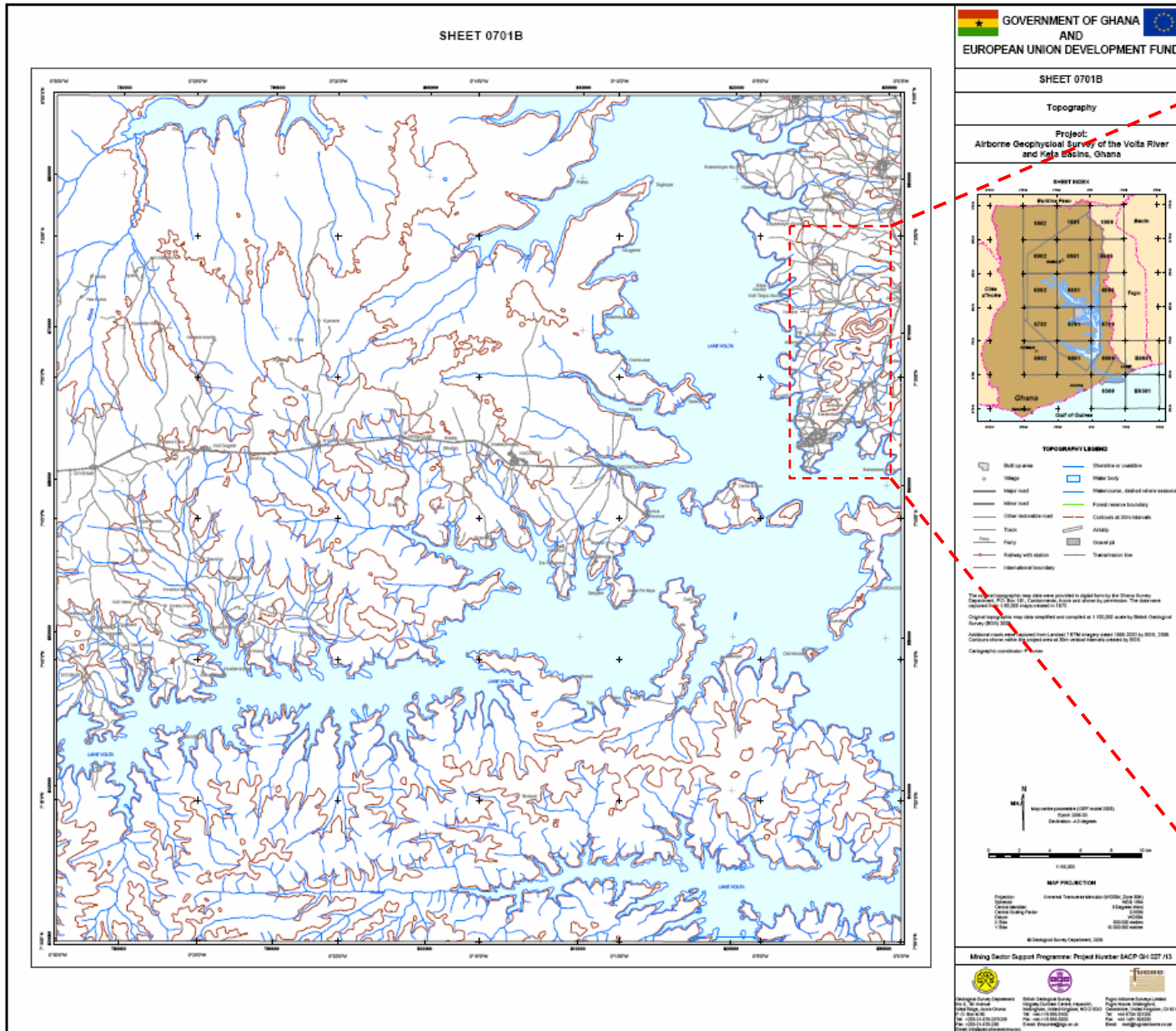


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Topographic Map Output

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Formal & Informal Training

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Summary

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- Compiled existing data (GIS)
- Interpret the data and formulate an updated geological model
- Fieldwork
- Map production
- Integrate newly acquired geophysics
- Interpret new datasets
- Fieldwork
- Update geological maps (with Fugro)

