

The following was presented at DMT'11  
(May 22-25, 2011).

The contents are provisional and will be  
superseded by a paper in the  
DMT'11 Proceedings.

See also earlier Proceedings (1997-2010)  
<http://ngmdb.usgs.gov/info/dmt/>



# Placita 7 1/2 " Quad, Pitkin County, Colorado

## 3D Geology Map Using ESRI ArcGIS10

The Placitas Quadrangle covers the southern portion of the Carbondale, Colorado coal mining area near Redstone, Pitkin County, Colorado. In 2010, I presented an example of data capture and conversion into ESRI geodatabase using new 2D and 3D capabilities of ArcGIS10. As an example of a complete 3D geologic map, the draped 2D data from the original maps has been extruded into a fully functional 3D geologic model.

This poster will be both a paper printed product and a live digital demo of the data.

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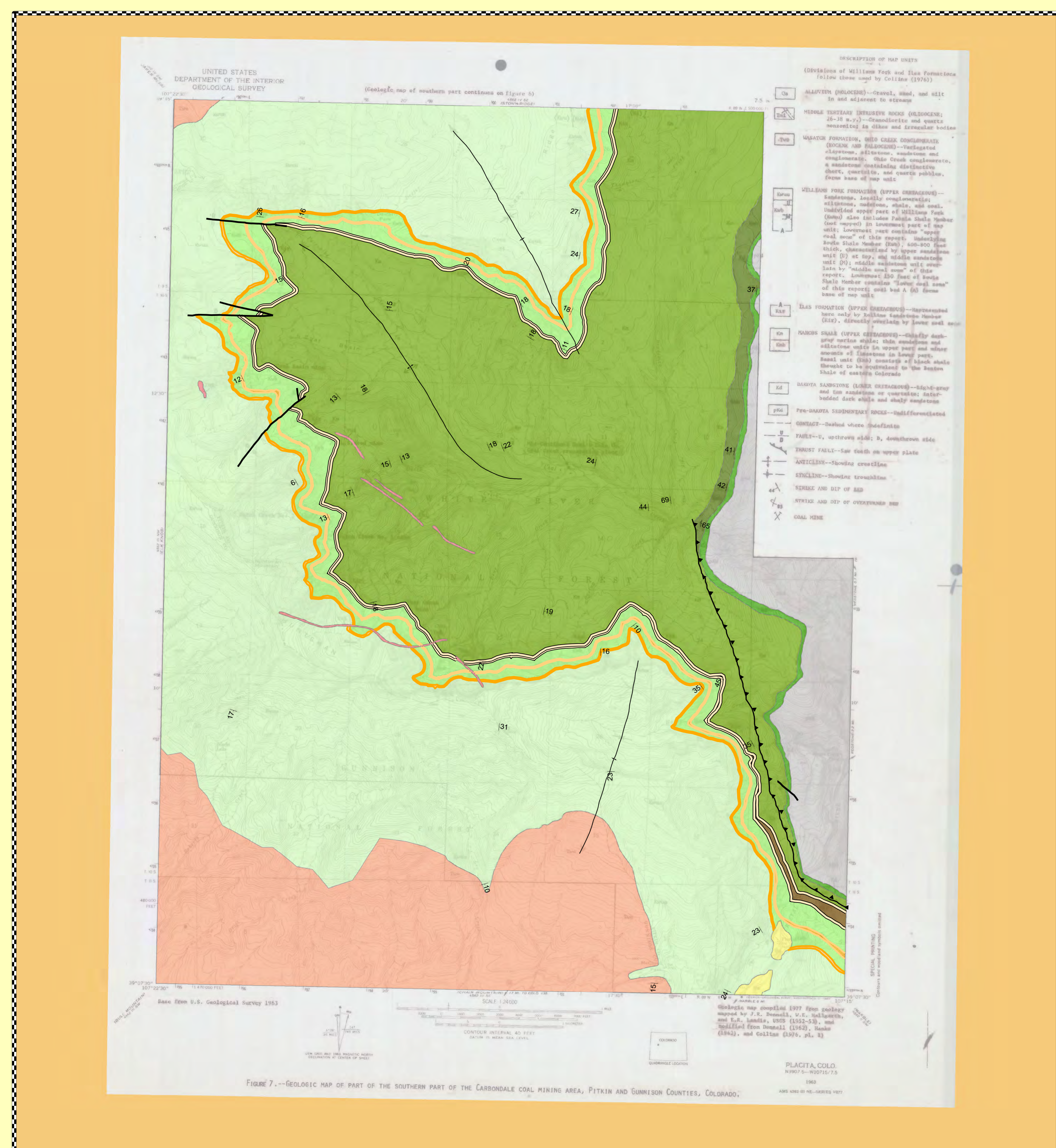
### 3D Data Creation

**Calculate Structure Points Downdip using XYZ with Model & Scripting**

```

    * Calculate X for 4 cases of bearing with values 0-360
    DIM NewX, bearing, distance
    bearing = [Dip_Direction]
    distance = [Offset_Distance]
    pointX = [POINT_X]
    If bearing = 0 or bearing = 360 Then
        NewX = pointX
    ElseIf bearing = 90 or bearing < 180 Then
        NewX = pointX + Cos((90 - bearing) * (3.1415926535897932/180)) * distance
    ElseIf bearing = 270 Then
        NewX = pointX - distance
    ElseIf bearing = 180 or bearing < 270 Then
        NewX = pointX + Cos((270 - bearing) * (3.1415926535897932/180)) * distance
    ElseIf bearing = 90 Then
        NewX = pointX - distance
    End If
    
```

2D Geologic Map



### 3D Data Creation

Interpolate and create surfaces using crosslines, structure points and cross sections data

3D Geologic Map

