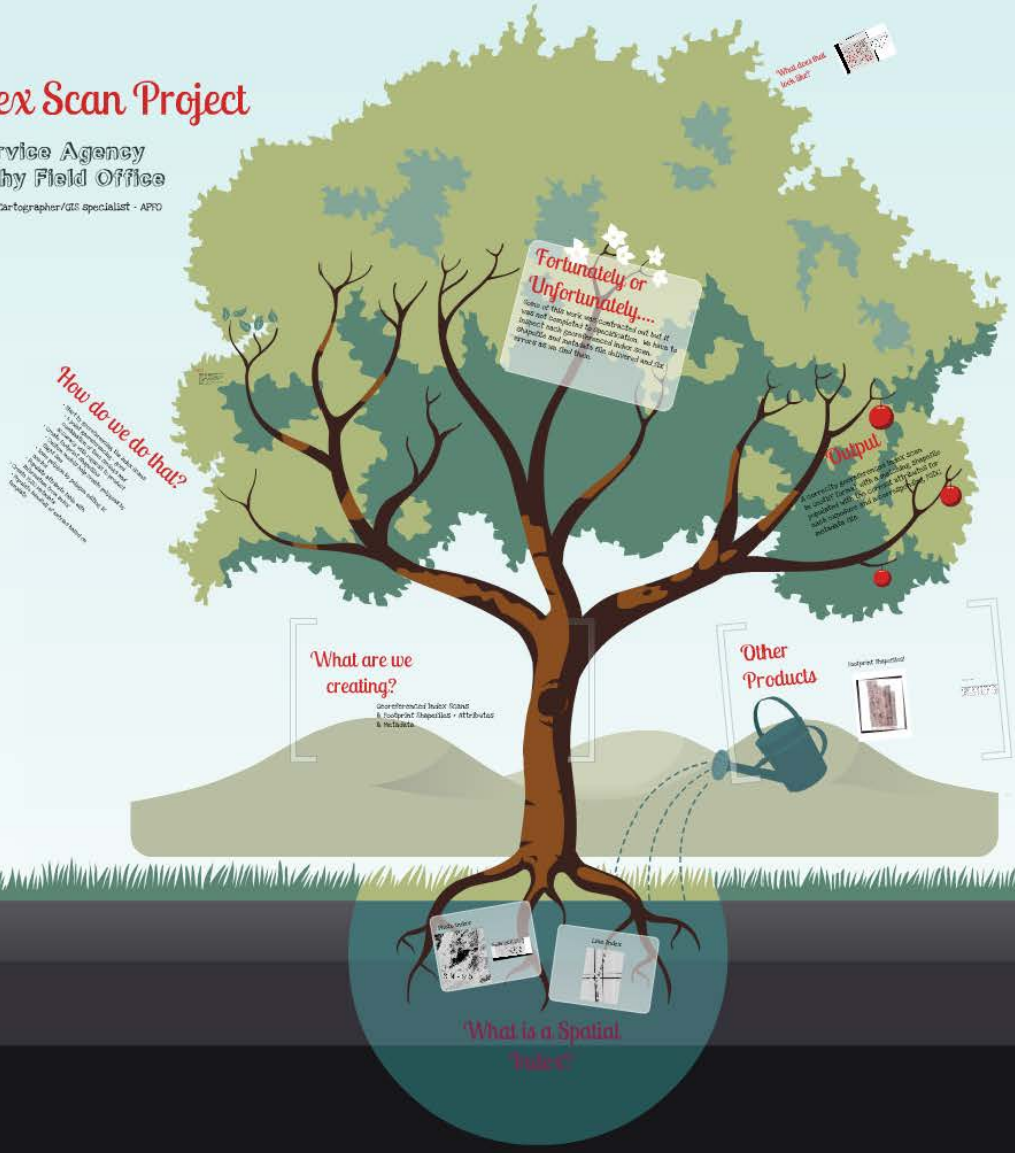
Spatial Index Scan Project

USDA - Farm Service Agency
Aerial Photography Field Office

July 21st, 2015

Nathan Pugh - Cartographer/GIS Specialist - APFO



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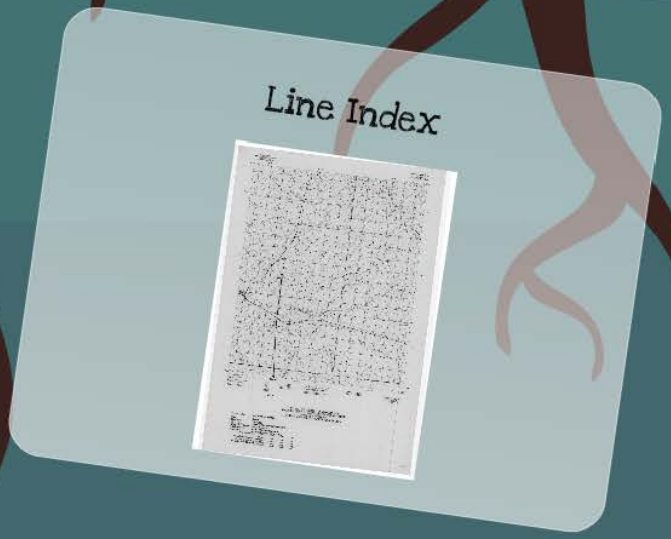
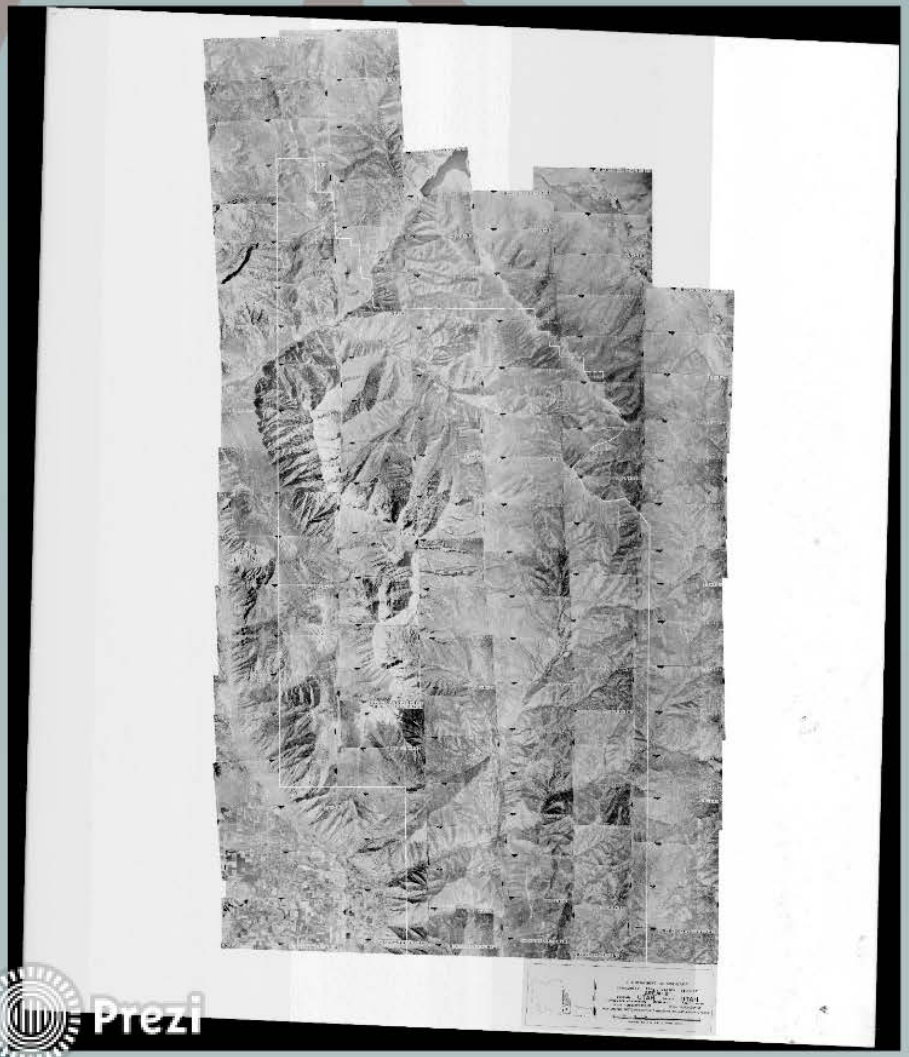
Background

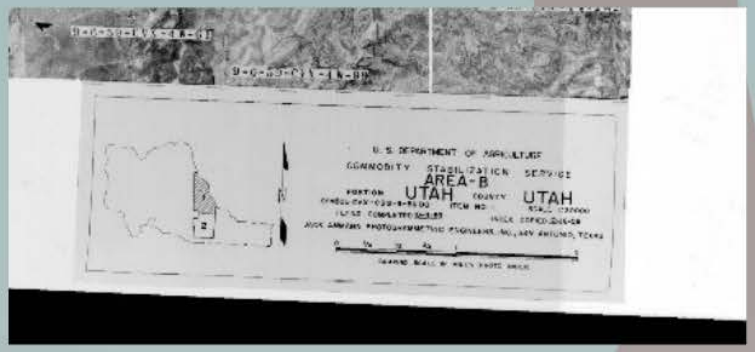
- The USDA - FSA - Aerial Photography Field Office currently administers NAIP.
- The USDA - FSA - Aerial Photography Field Office has a warehouse with over 70,000 rolls of aerial film which is roughly 11 million exposures.
- Each past project (could be several rolls of film) has a spatial index



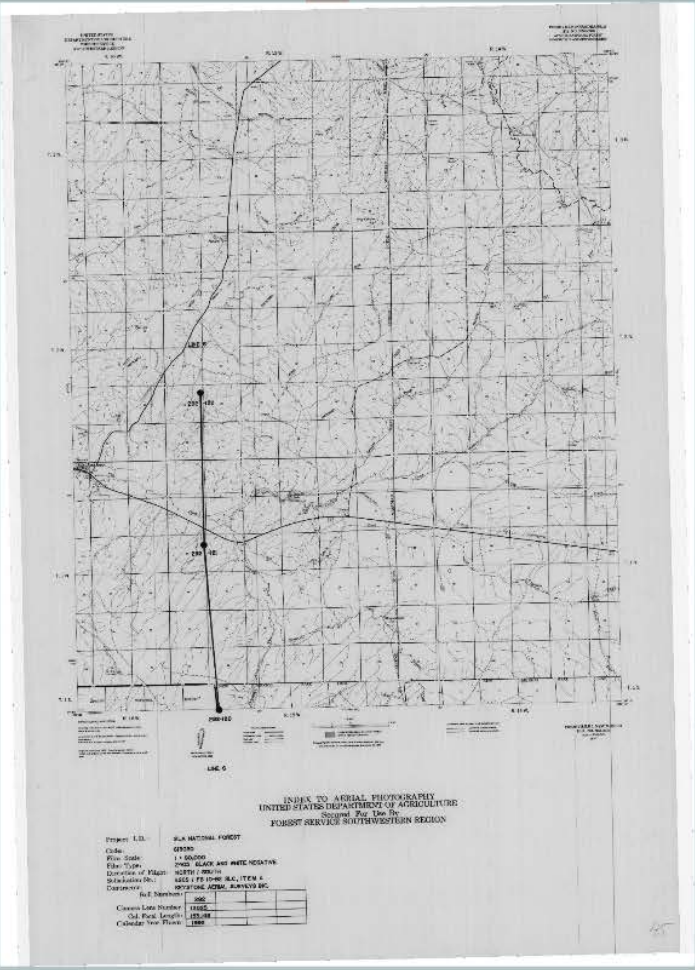
What is a Spatial Index?

Photo Index



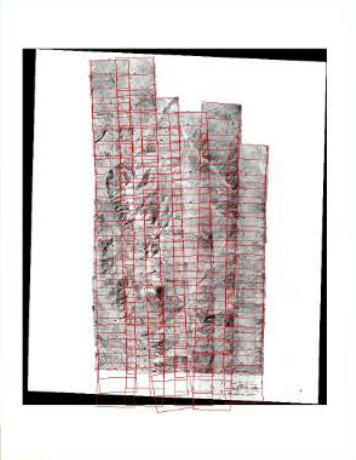

U. S. DEPARTMENT OF AGRICULTURE
COMMODITY STABILIZATION SERVICE
AREA-B
UTAH
UTAH

Line Index

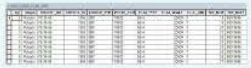

LINE 6
INDEX TO AERIAL PHOTOGRAPHY
UNITED STATES DEPARTMENT OF AGRICULTURE
Occupied For Use By
FOREST SERVICE SOUTHWESTERN REGION

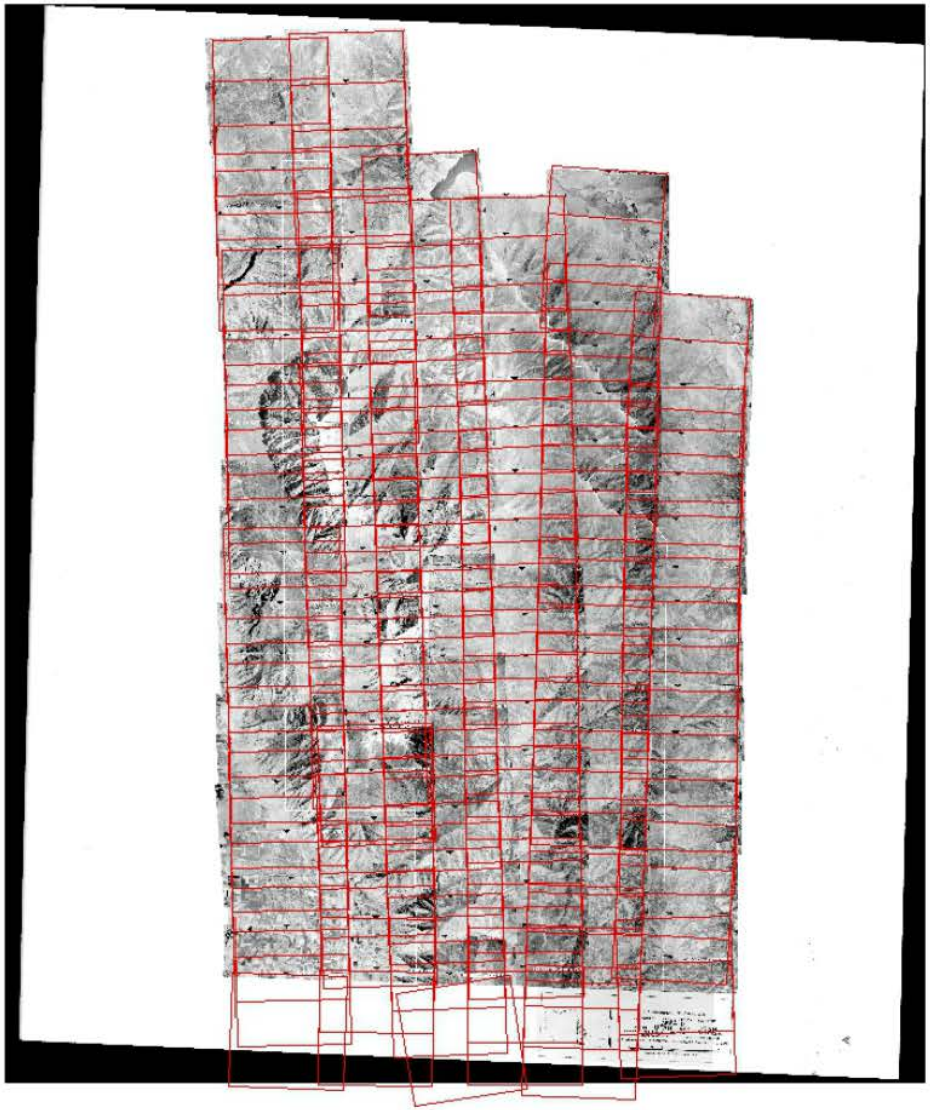
Other Products

Footprint Shapefiles!



Attribute Table





Attribute Table

o_fs002_f2040_12_06_1956

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1	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	19	9/25/1956
2	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	20	9/25/1956
3	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	21	9/25/1956
4	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	22	9/25/1956
5	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	23	9/25/1956
6	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	24	9/25/1956
7	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	25	9/25/1956
8	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	26	9/25/1956
9	Polygon	FS 36-56	1956	EBX	FS002	SBNI	20000	3	27	9/25/1956

Metadata

o_nhap1_49001_12_01_1982.shp.txt - Notepad

File Edit Format View Help

```
Identification_Information:
  Citation:
    Citation_Information:
      Originator: USDA-FSA-APFO Aerial Photography Field Office
      Title: o_nhap1_49001_12_01_1982
      Publication_Date: 20131121
      Edition: Version
      Geospatial_Data_Presentation_Form: vector digital data
      Publication_Information:
        Publication_Place: Salt Lake City, Utah
        Publisher: USDA-FSA-APFO Aerial Photography Field Office
  Description:
    Abstract: This data set contains polygons delineating the approximate boundaries of exposures represen
, roll and exposure numbers, and exposure dates. Indexes are formatted to the UTM coordinate system using
    Purpose: To preserve in a geospatially ready format unique and irreplaceable data. Most historical geo
  Time_Period_of_Content:
    Time_Period_Information:
      Single_Date/Time:
        Calendar_Date: 1984
    Currentness_Reference: ESRI shapefile creation date.
  Status:
    Progress: Complete
    Maintenance_and_Update_Frequency: None Planned
  Spatial_Domain:
    Bounding_Coordinates:
      West_Bounding_Coordinate: -112.766444
      East_Bounding_Coordinate: -112.360138
      North_Bounding_Coordinate: 38.645573
      South_Bounding_Coordinate: 38.064914
  Keywords:
    Theme:
      Theme_Keyword_Thesaurus: None
      Theme_Keyword: farming
      Theme_Keyword: Film Vault
      Theme_Keyword: Historical
      Theme_Keyword: United States Department of Agriculture (USDA)
      Theme_Keyword: Digital Georeferenced Image
    Place:
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      Place_Keyword: USA
      Place_Keyword: FSA
      Place_Keyword: "Beaver"
      Place_Keyword: Aerial Photography Field Office
      Place_Keyword: APFO
      Place_Keyword: USDA
      Place_Keyword: United State Department of Agriculture (USDA)
```

What are we creating?

Georeferenced Index Scans
& Footprint Shapefiles + Attributes
& Metadata

How do we do that?

- Start by georeferencing the index scans
  - 4 point georeferencing - good combination of time savings and accuracy with regards to product
- Create footprint shapefiles
  - Custom models help create polygons by flight line
  - Some polygon by polygon editing is needed
  - Populate attribute table with information from index
- Create FGDC Metadata
  - Populate handfull of entries based on template

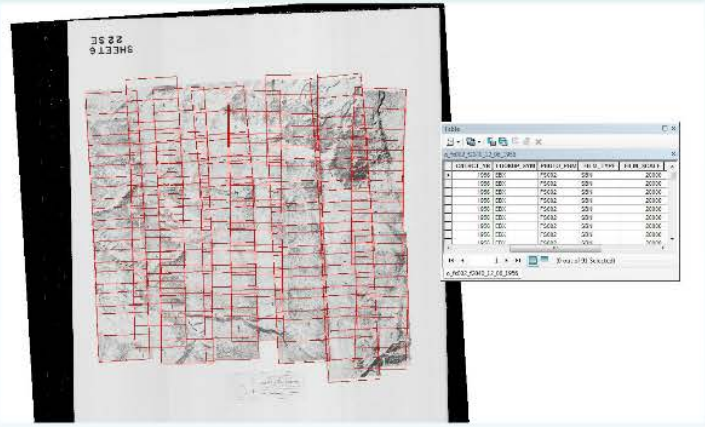
Fortunately or Unfortunately....

Some of this work was contracted out but it was not completed to specification. We have to inspect each georeferenced index scan, shapefile and metadata file delivered and fix errors as we find them.

Output

A correclty georeferenced Index Scan in Geotiff format with a matching Shapefile populated with the correct attributes for each exposure and a corresponding FGDC metadata file.

What does that look like?



Next?

We hope to place the footprint shapefiles into an ArcGIS Online Map(s) so the public can search for all the historical imagery available within APO holdings

Date - TBD...

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Date - TBD....

Questions?