

## Positional Accuracy Evaluation for 1935 Historic Forest Type

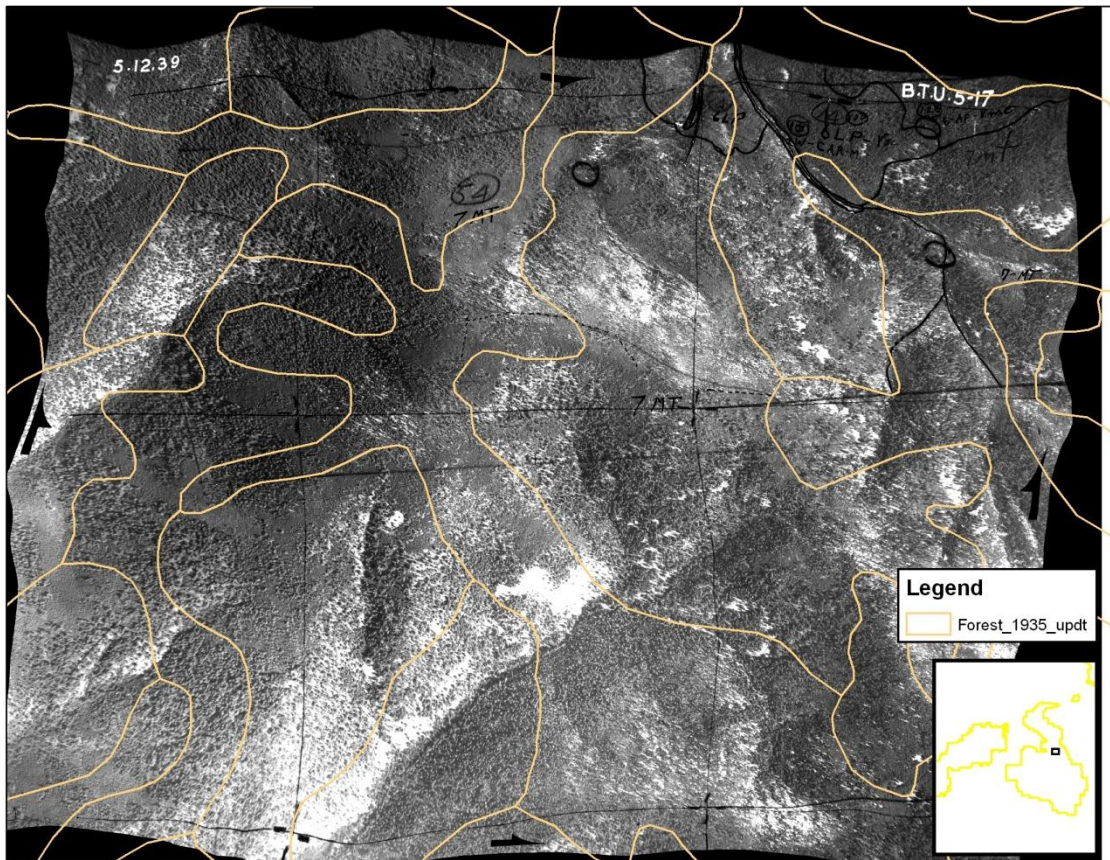
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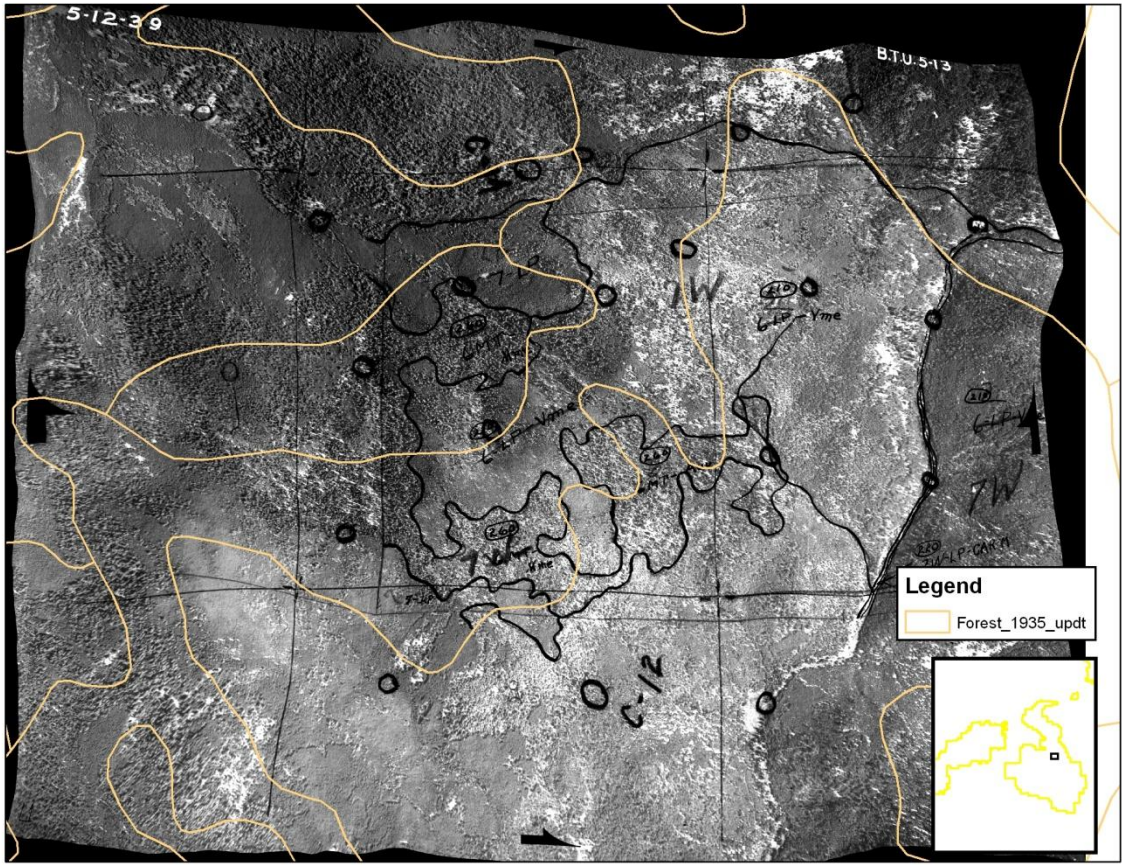
Date: Feb. 5, 2008

The task was to evaluate the positional accuracy of the 1935-36 forest type polygons. To achieve this, TTEC was to display the 1935-36 forest type polygons over the rectified 1939 aerial photos and compare the displacement, if any, of these polygons to the matching features on the photos.

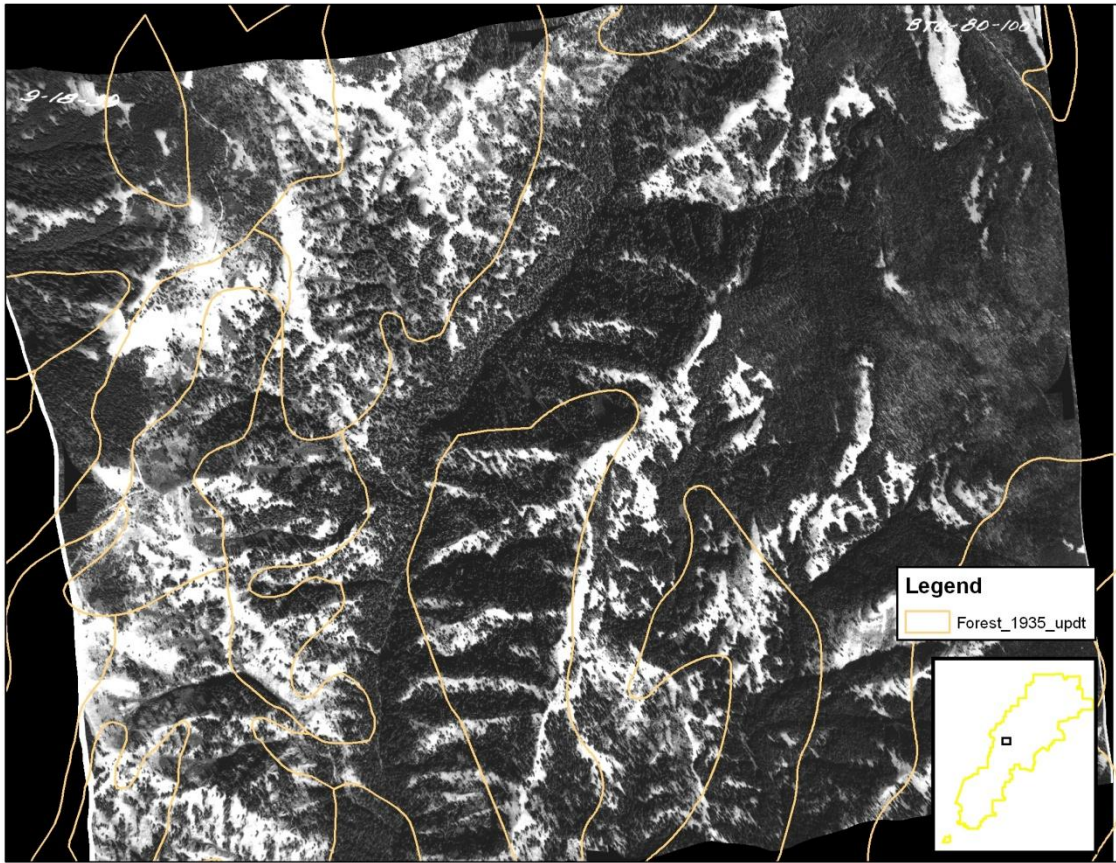
After reviewing the supplied rectified aerial photos from the Umatilla National Forest, it has been concluded that there was not enough correlation between the 1935-36 coverage polygon boundary shapes and the possible matching forest vegetation types boundaries on the aerial photos (see 4 example figures below).

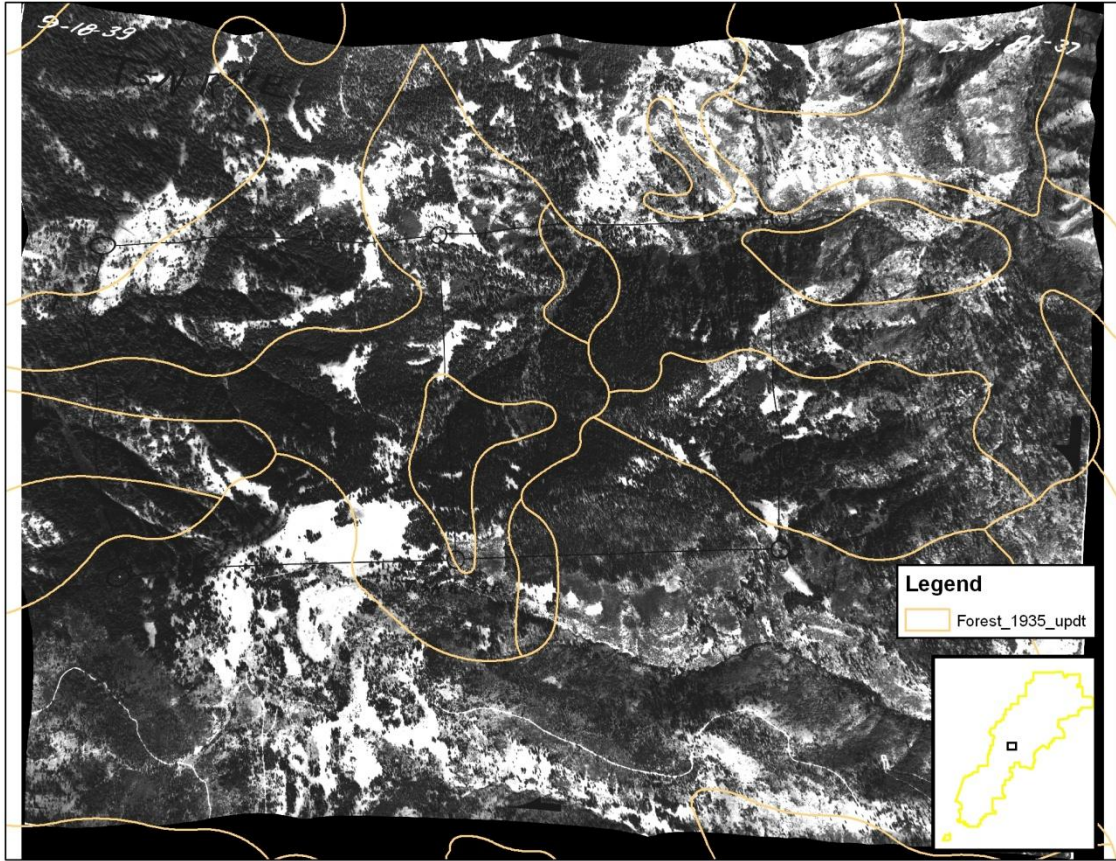
2 samples from south end photos:



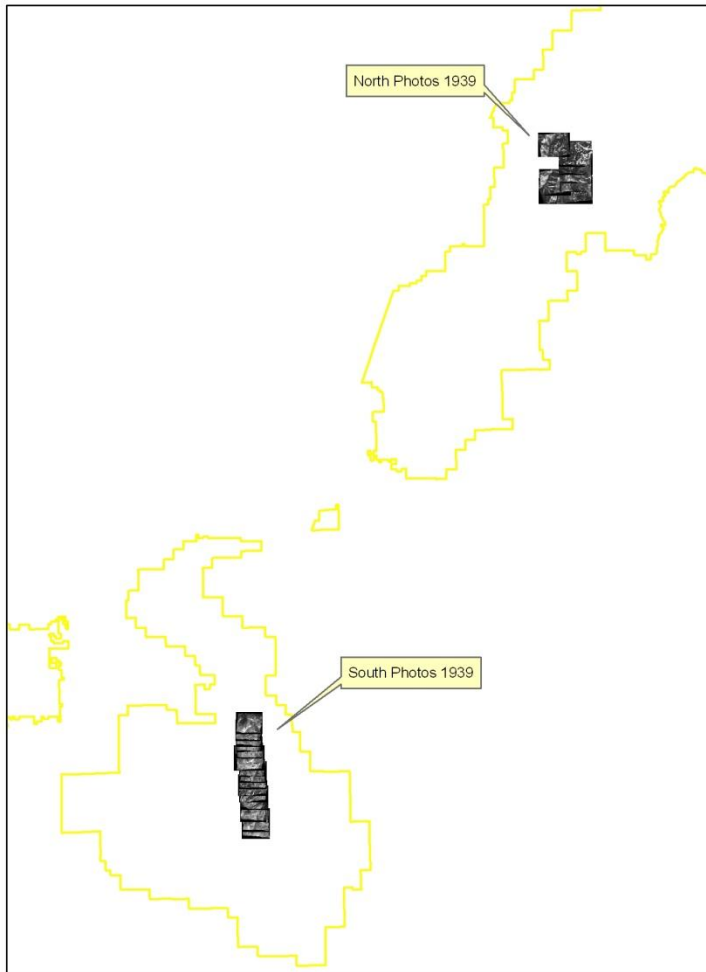


2 samples from north end photos:

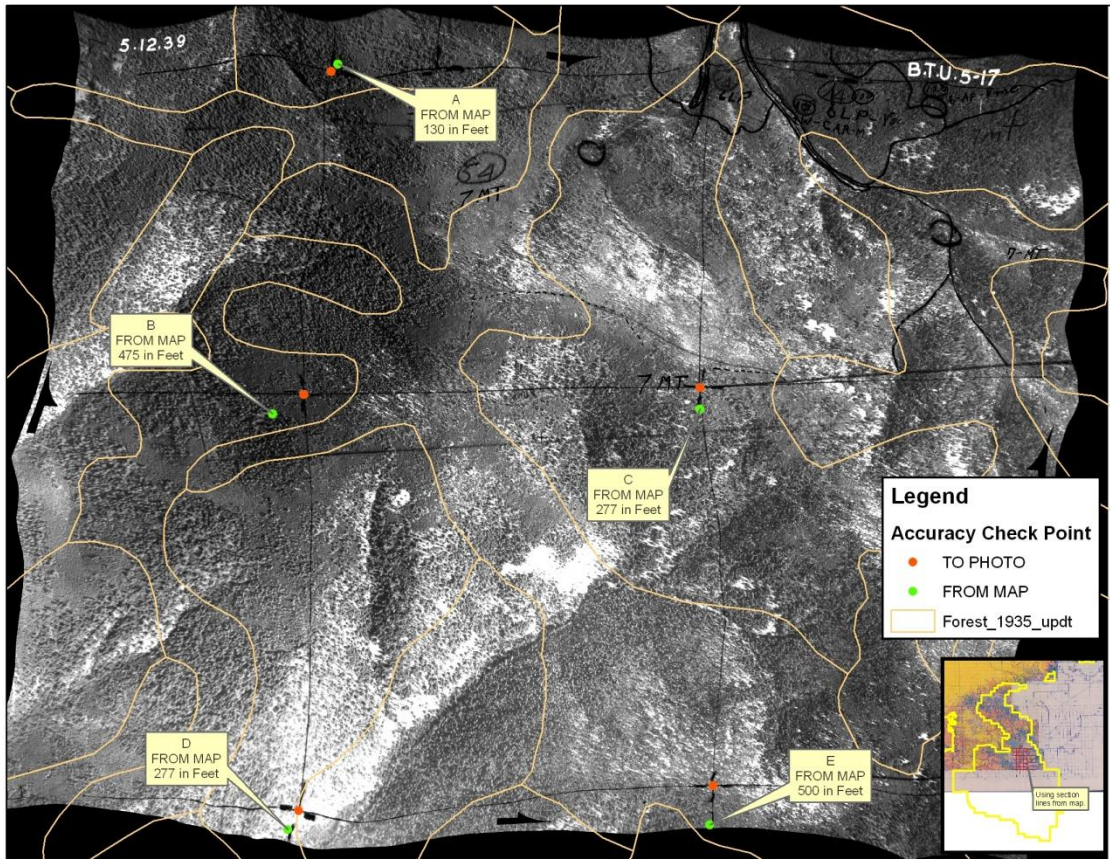




TTEC found what we thought to be section line corners displayed on the aerial photos for the south end set of photos (see figure below).



By using the historic map supplied, OR\_Umatilla\_south\_1936.tif, TTEC was able to digitize the section lines from the map and use this to compare positional accuracy for 11 positions between the map/coverage polygons and the photo (see figure of example below)



Though this is not what was desired by the Forest Service, that is the best TTEC could do with the supplied aerial photos.

The following is the descriptive positional accuracy evaluation for the 11 points (corresponding to section line corners). Projection: Forest Service Albers NAD83 Meters.

Section Corner point A ( $x = 705787.4692$ ,  $y = 1224841.4873$ ) measures 130 feet to the south west of the photo located section corner.

Section Corner point B ( $x = 705530.299$ ,  $y = 1223467.6718$ ) measures 475 feet to the south west of the photo located section corner.

Section Corner point C ( $x = 707208.7213$ ,  $y = 1223487.0964$ ) measures 277 feet to the south of the photo located section corner.

Section Corner point D ( $x = 705589.0642$ ,  $y = 1221837.8104$ ) measures 277 feet to the south west of the photo located section corner.

Section Corner point E ( $x = 707247.6574$ ,  $y = 1221856.0841$ ) measures 500 feet to the south of the photo located section corner.

Section Corner point F ( $x = 705655.0413$ ,  $y = 1220213.0901$ ) measures 317 feet to the south west of the photo located section corner.

Section Corner point G ( $x = 707287.2708$ ,  $y = 1220231.6891$ ) measures 196 feet to the south of the photo located section corner.

Section Corner point H ( $x = 705722.3396$ ,  $y = 1218536.6509$ ) measures 596 feet to the south east of the photo located section corner.

Section Corner point I ( $x = 707331.884$ ,  $y = 1218561.9101$ ) measures 412 feet to the south of the photo located section corner.

Section Corner point J ( $x = 705786.4209$ ,  $y = 1216919.6$ ) measures 751 feet to the south east of the photo located section corner.

Section Corner point K ( $x = 707377.0173$ ,  $y = 1216933.2037$ ) measures 531 feet to the south west of the photo located section corner.

Feb 20, 2008

After further discussion with Donald Justice of the Forest Service, additional points were collected for positional accuracy checks based on features found on the OR\_Umatilla\_south\_1935.tif map. There were limited additional features to select from, therefore full coverage over the supplied aerial photo extents was not possible. Features that were used to perform the additional accuracy check points were roads and streams. There will be additional errors in accuracy using the features because the features on the map are much more general in shape than what is seen on the aerial photos.

1. Aerial photo stream feature near (707995.2322, 1221467.5199) measures 365 feet to the east of the mapped stream feature.
2. Aerial photo stream feature near (707949.3712, 1220277.4283) measures 260 feet to the east of the mapped stream feature.
3. Aerial photo stream feature near (708187.8482, 1219243.2639) measures 400 feet to the east of the mapped stream feature.
4. Aerial photo stream feature near (707550.381, 1218264.1327) measures 800 feet to the west of the mapped stream feature.
5. Aerial photo stream feature near (706528.5417, 1216980.3127) measures 670 feet to the north of the mapped stream feature.
6. Aerial photo stream feature near (705296.9049, 1220473.706) measures 550 feet to the north east of the mapped stream feature.
7. Aerial photo stream feature near (706040.6296, 1219270.3403) measures 300 feet to the east of the mapped stream feature.
8. Aerial photo road feature near (705901.5984, 1217240.1425) measures 100 feet to the north of the mapped road feature.
9. Aerial photo road feature near (706739.004, 1217237.7702) measures 500 feet to the north of the mapped road feature.
10. Aerial photo road feature near (708228.7794, 1216993.4281) measures 1100 feet to the north of the mapped road feature.