A topographic map of the Washita River basin, showing the terrain in shades of gray and the river network in blue. The map is oriented vertically, with the headwaters at the top and the main stem flowing towards the bottom right.

NED-H Collaborators Meeting
U.S. Geological Survey/EROS Data Center
Main Conference Room
Sioux Falls, SD

NAWQA Washita Pilot Study

Presented By
Jay Kost, Scientist
Raytheon ITSS

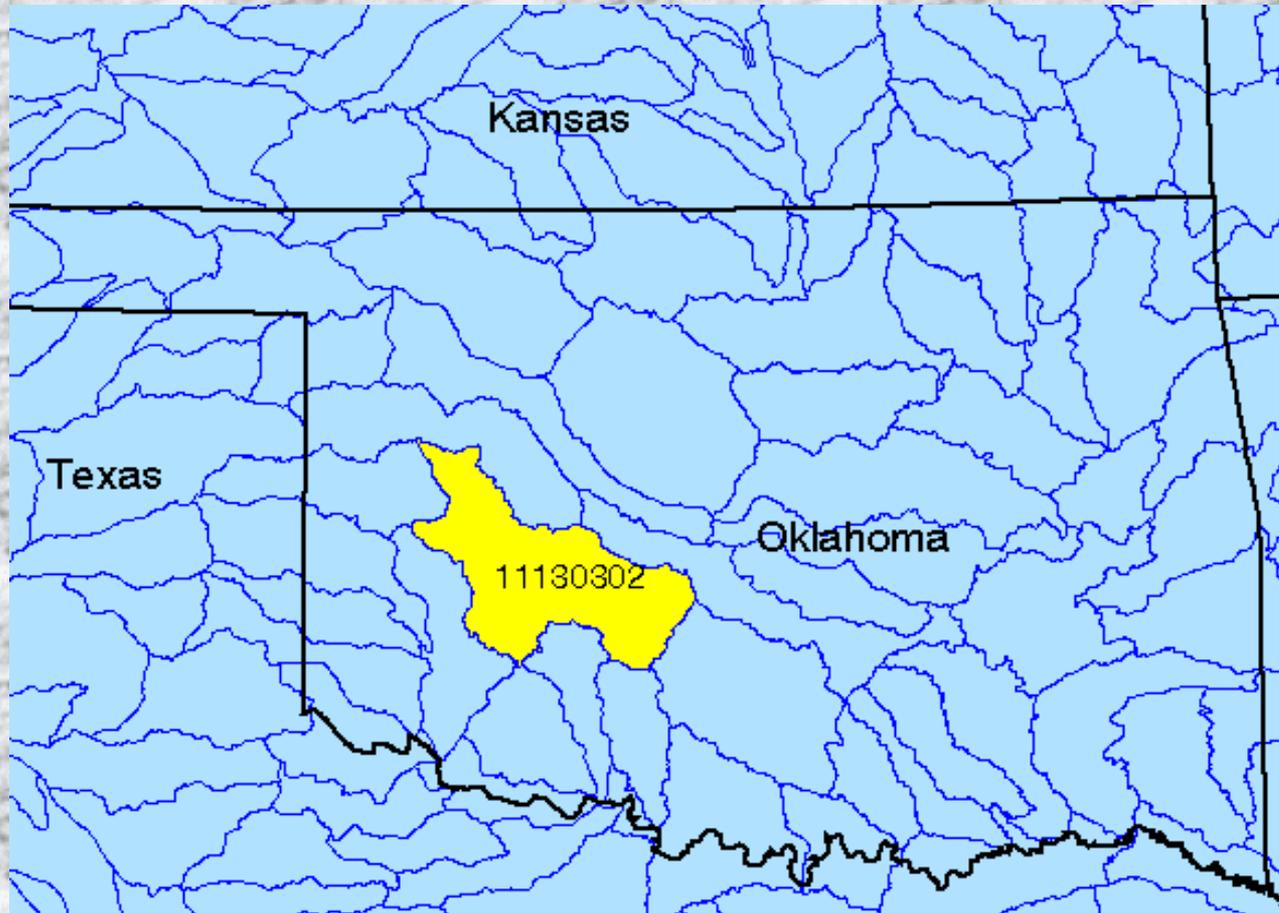
NAWQA Washita Pilot Study

I. Objectives of the study

- A. Develop methods for NED-H data set production.
- B. Test methods and identify possible problem issues.
- C. Document test methodologies and solicit feedback.

NAWQA Washita Pilot Study

Washita Watershed Location



NAWQA Washita Pilot Study

II. Processing steps

A. Obtain existing data sets

- 1. NHD streams**
- 2. NED DEM**
- 3. DRG**
- 4. Digitized HUCs**

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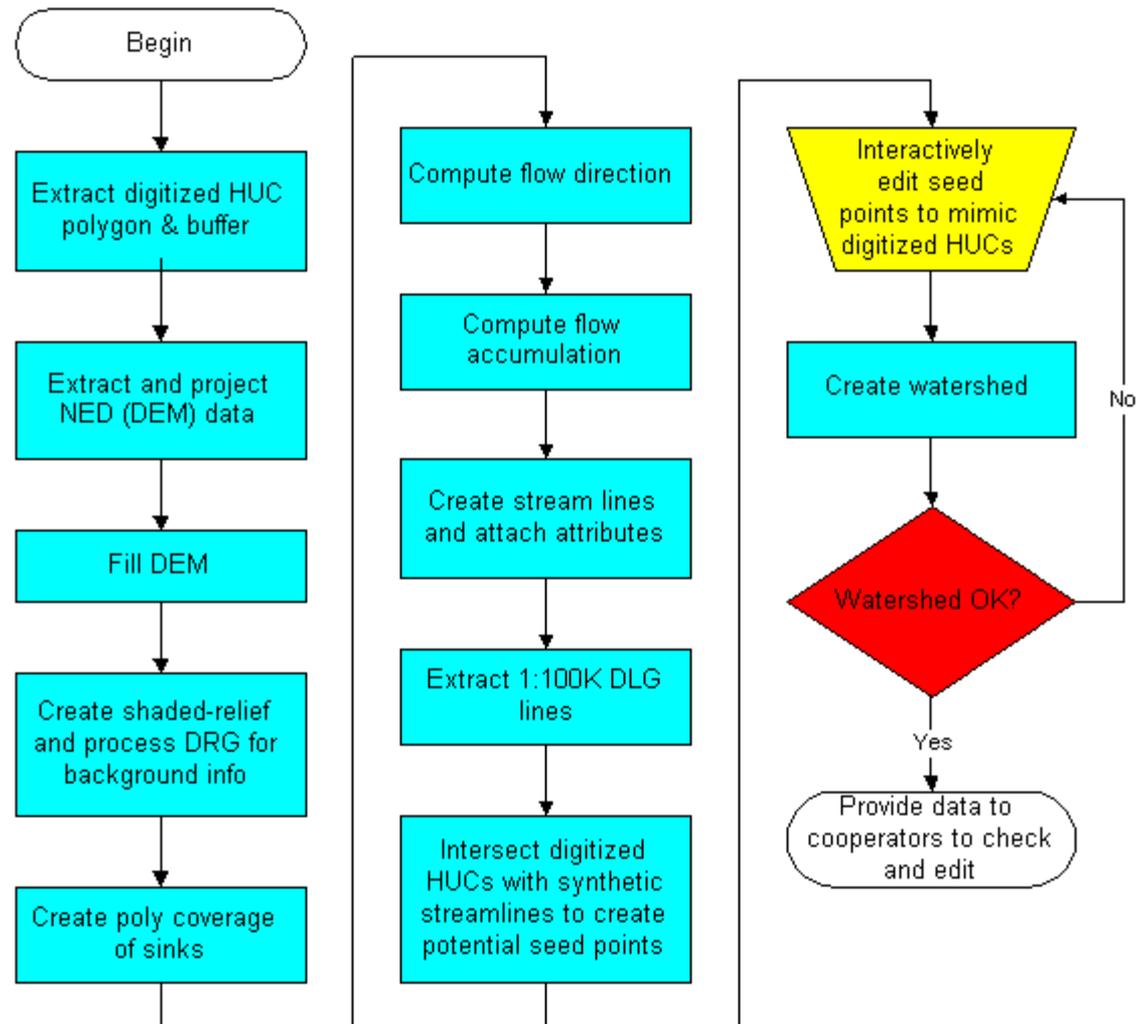
II. Processing steps

B. Process DEM data

- 1. Fill DEM**
- 2. Create shaded relief**
- 3. Create sink coverage**
- 4. Generate flow direction grid**
- 5. Generate flow accumulation grid**
- 6. Create synthetic stream line coverage**
- 7. Create watershed and sub-watershed coverages**

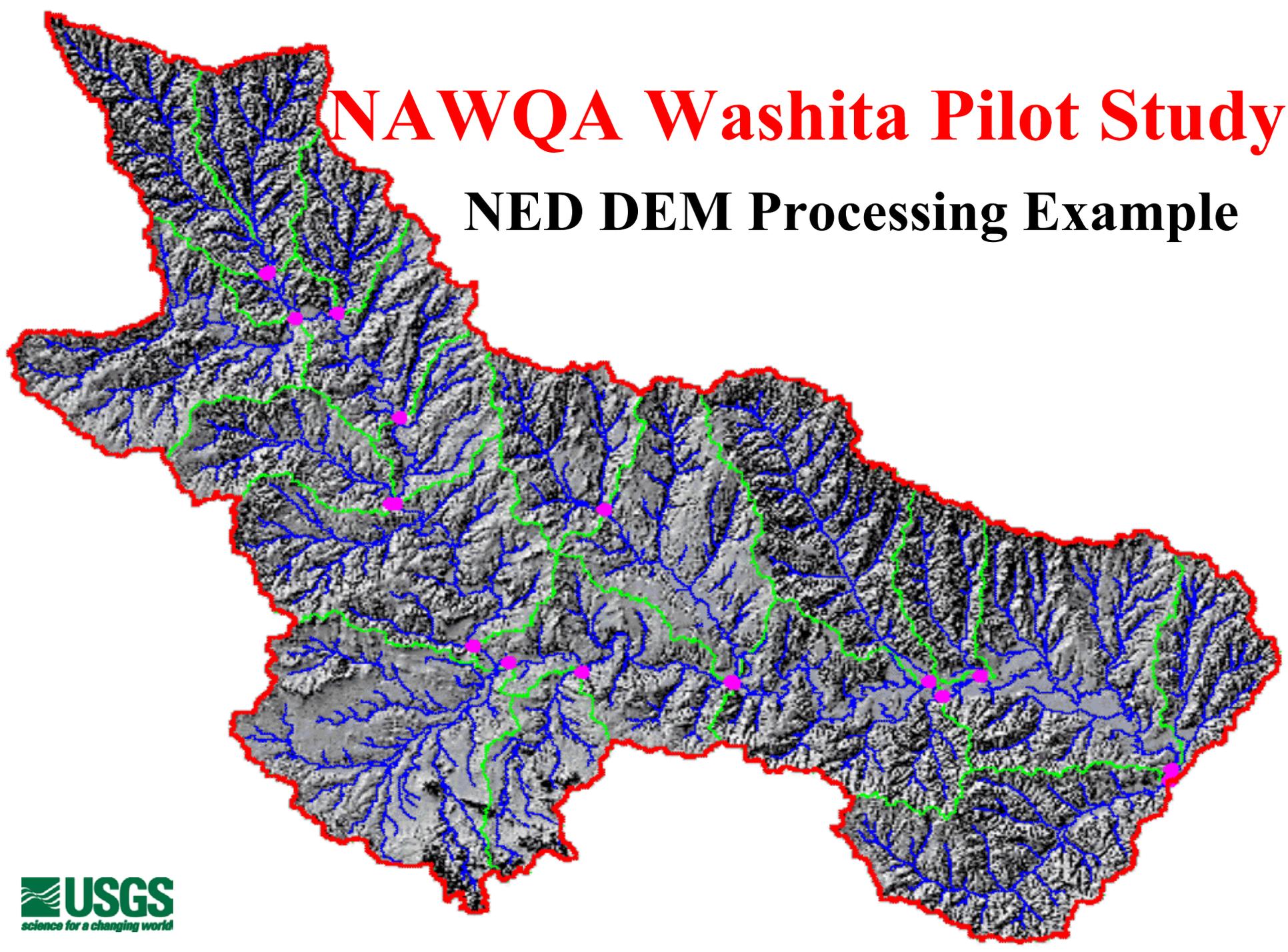
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NED-H Level 1 Processing Steps



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NED DEM Processing Example



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II. Processing steps

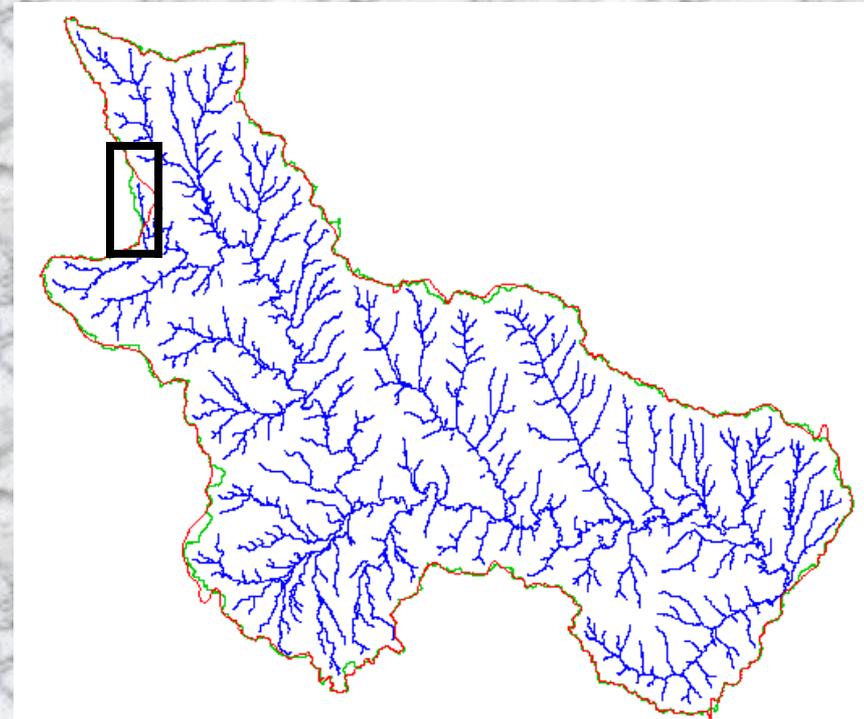
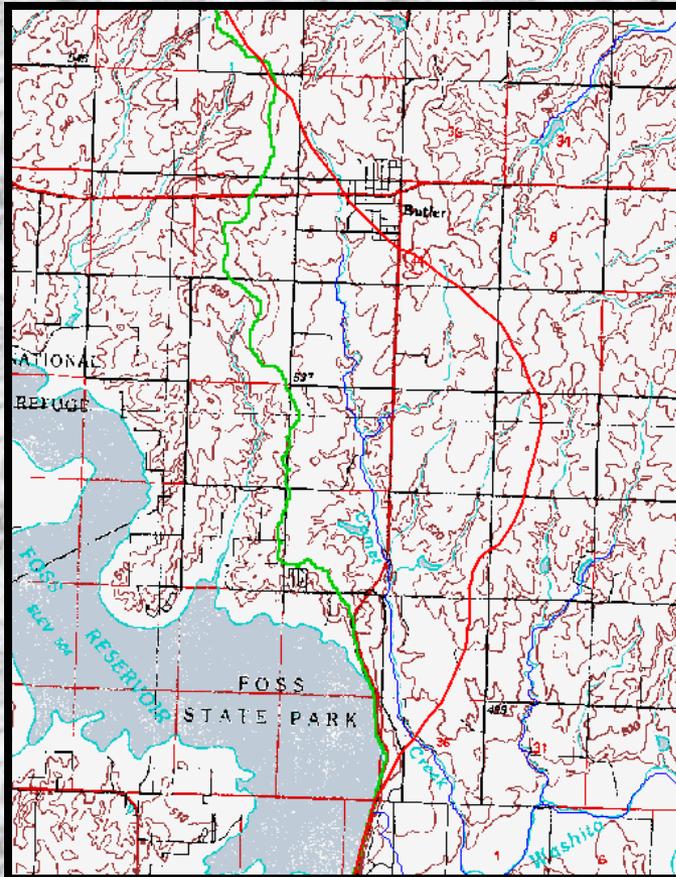
C. Synthetic watershed / HUC comparisons

- 1. Overlay and identify discrepancies**
- 2. Determine possible causes**
 - a. Seed location**
 - b. Flats**
 - c. Roads**
 - d. Data errors**
- 3. Flag and document findings**

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II. Processing steps

C. Synthetic watershed / HUC comparisons



NAWQA Washita Pilot Study

II. Processing steps

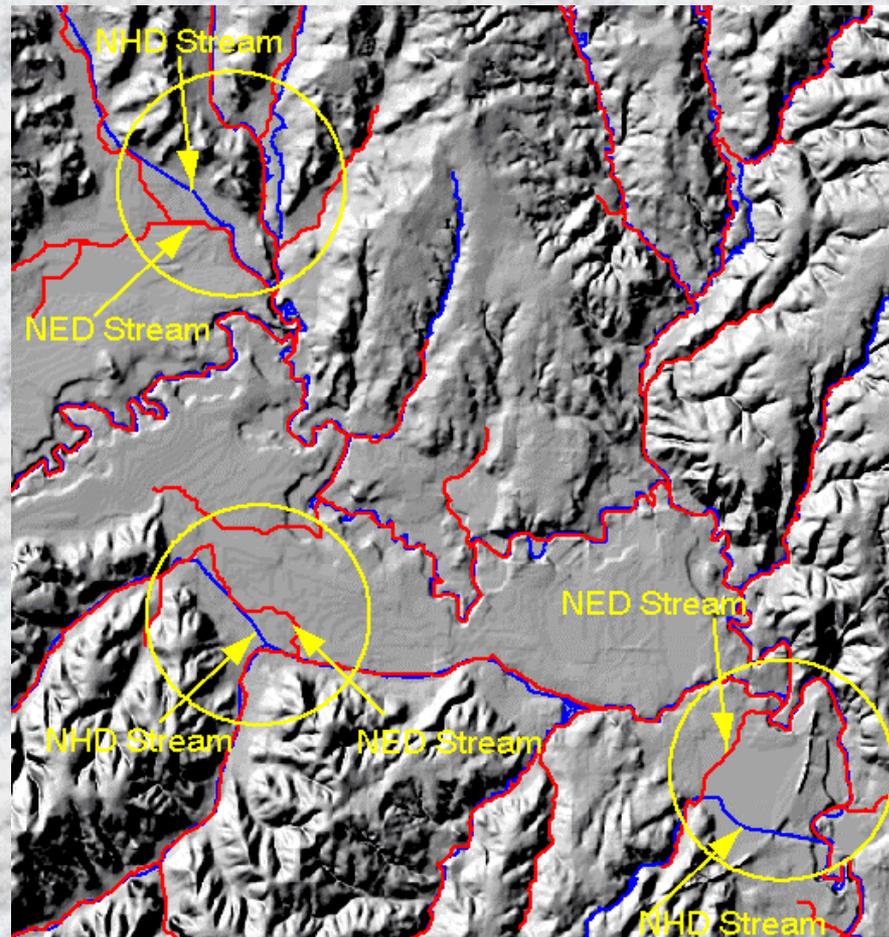
D. Synthetic stream/NHD stream comparisons

- 1. Overlay and identify significant discrepancies**
- 2. Determine possible causes**
- 3. Flag and document findings**

NAWQA Washita Pilot Study

II. Processing steps

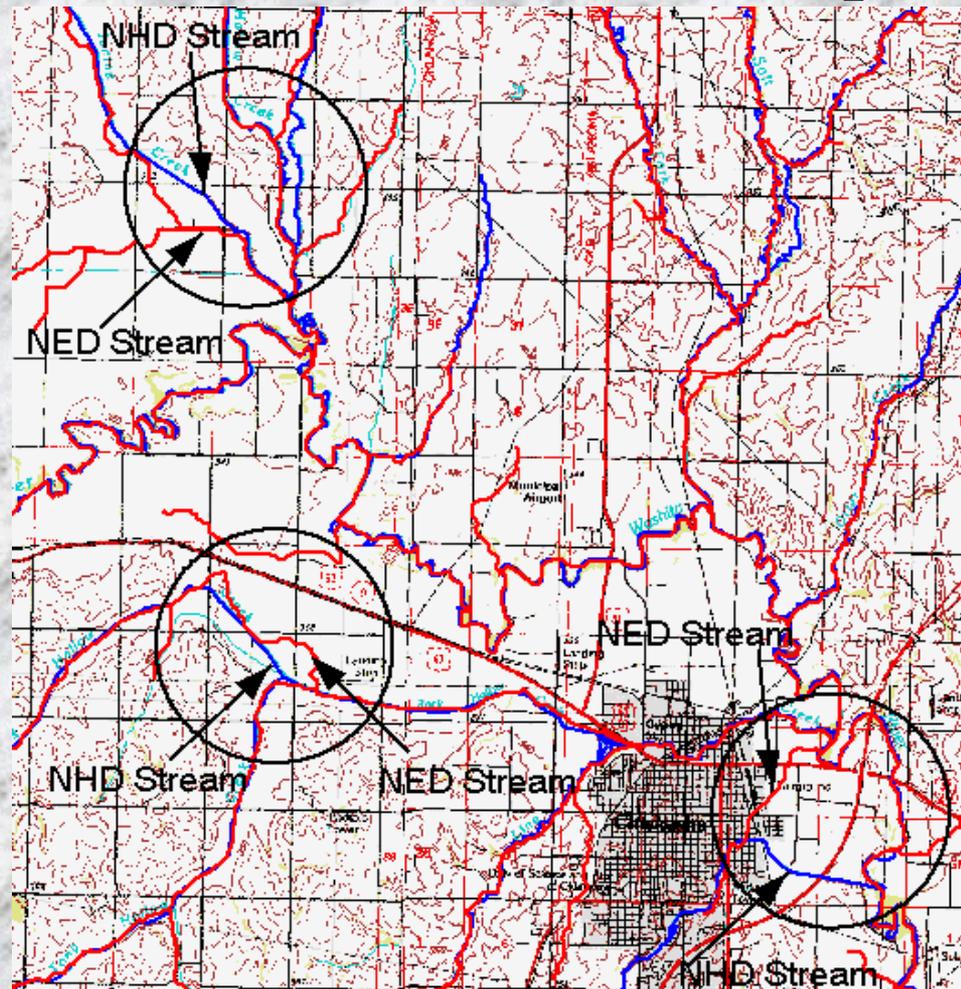
D. Synthetic stream/NHD stream comparisons



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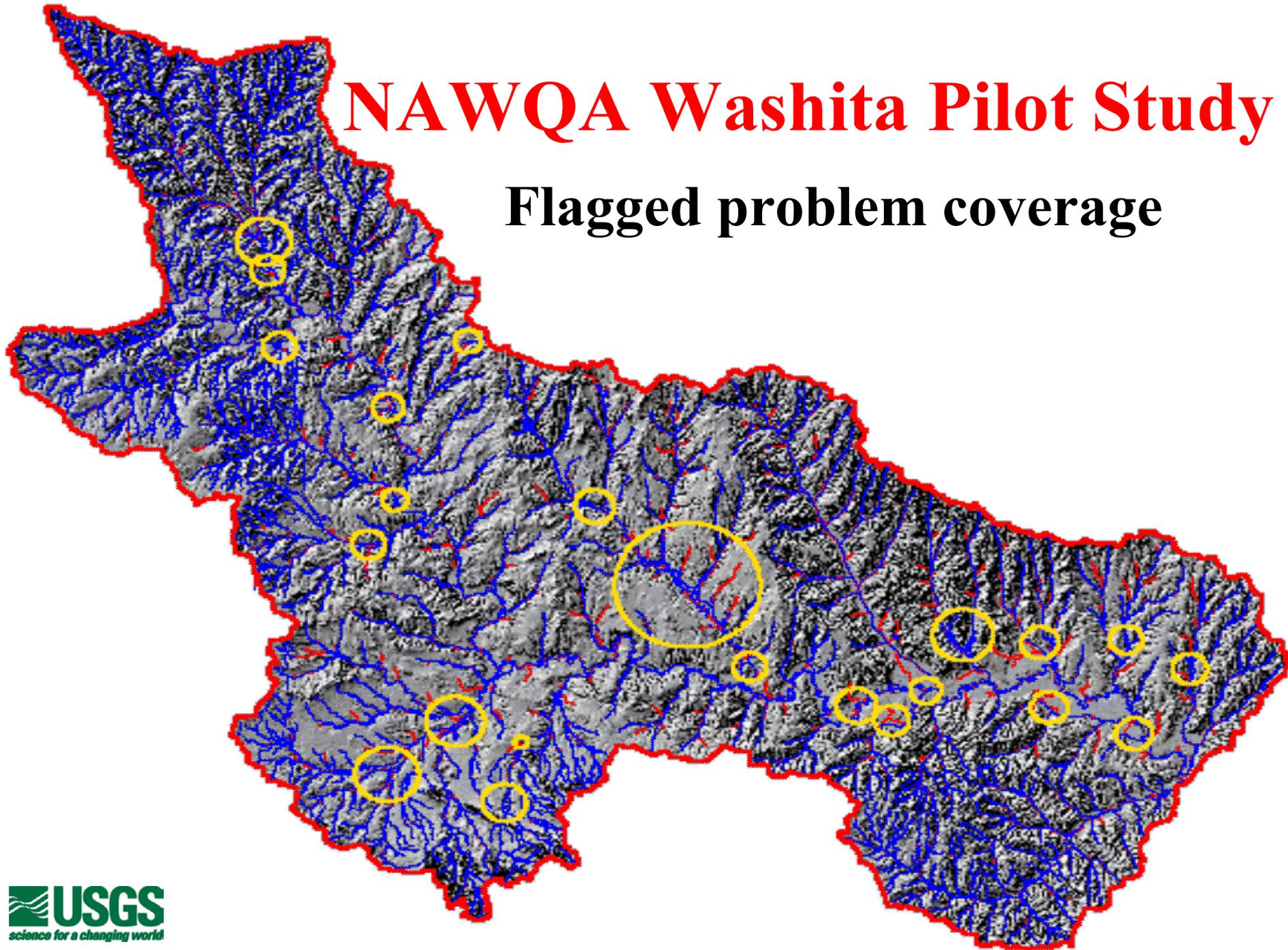
II. Processing steps

D. Synthetic stream / NHD comparison



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Flagged problem coverage



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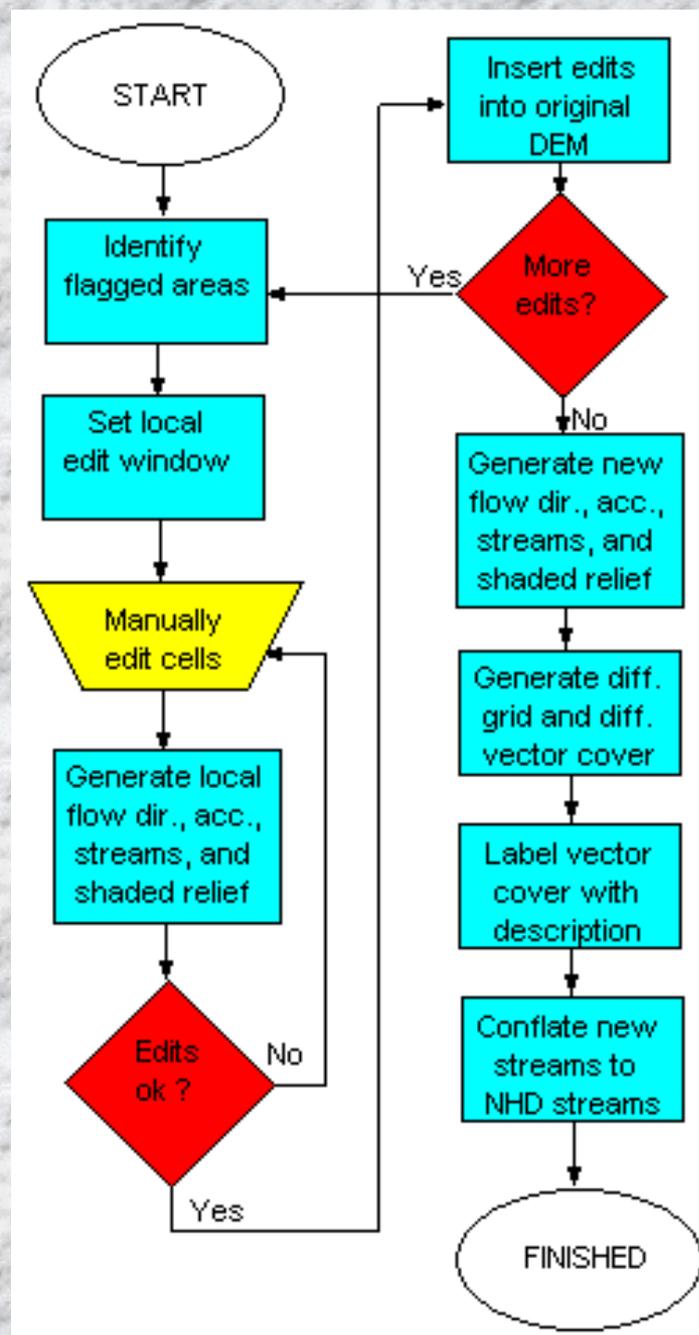
II. Processing steps

E. Develop hydrologically correct DEM

- 1. Utilize developed edit tools**
- 2. Use flag coverage and comments for identification**
- 3. Minimize cell edits**
- 4. Verify edits**
- 5. Incorporate edits into new watershed DEM**

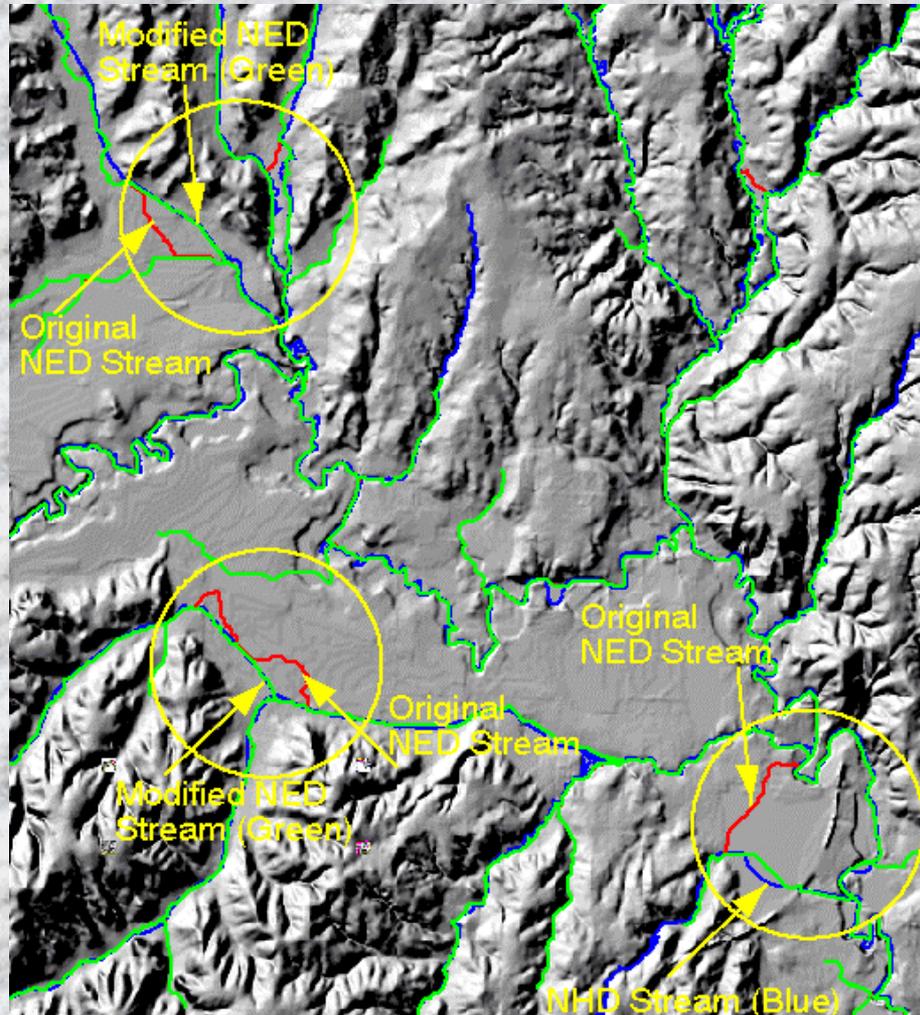
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DEM Edit Flow Diagram



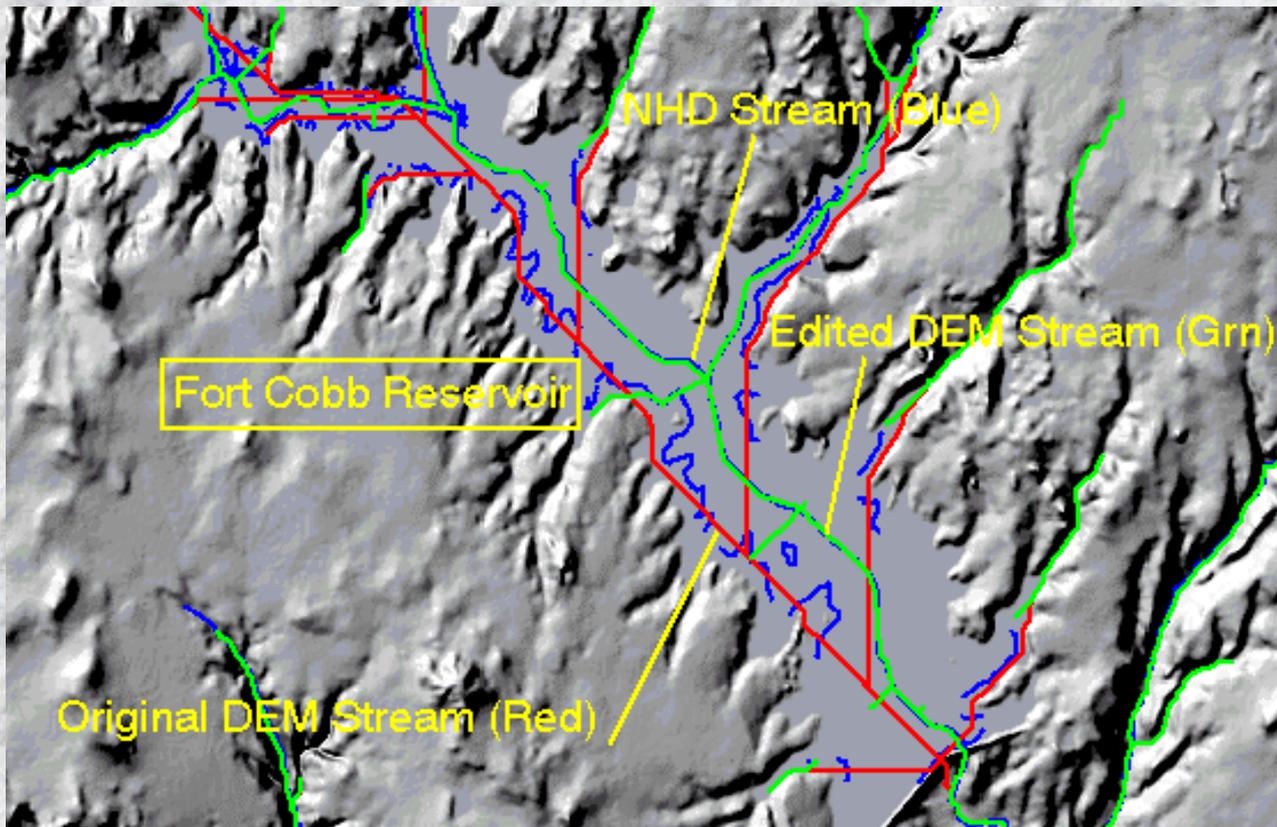
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Stream line comparison



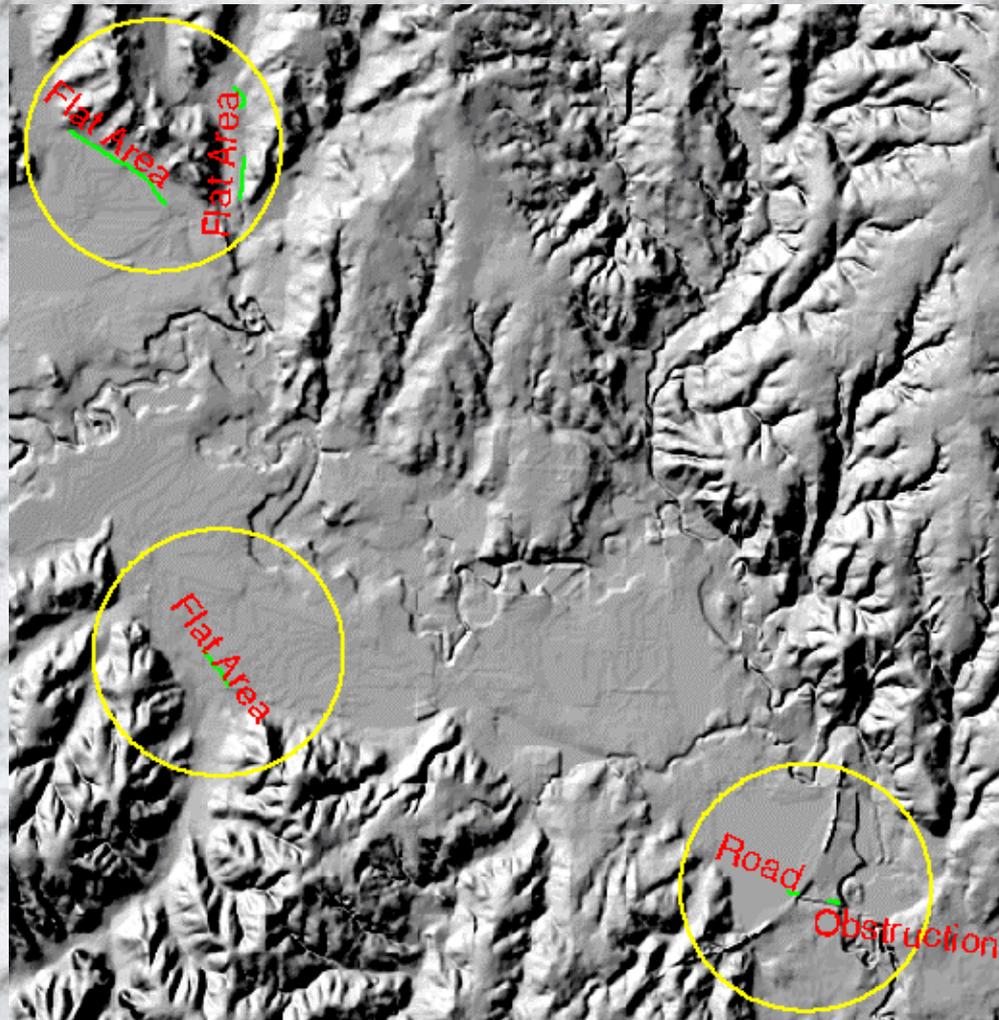
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Flat area



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Difference vector coverage with labels



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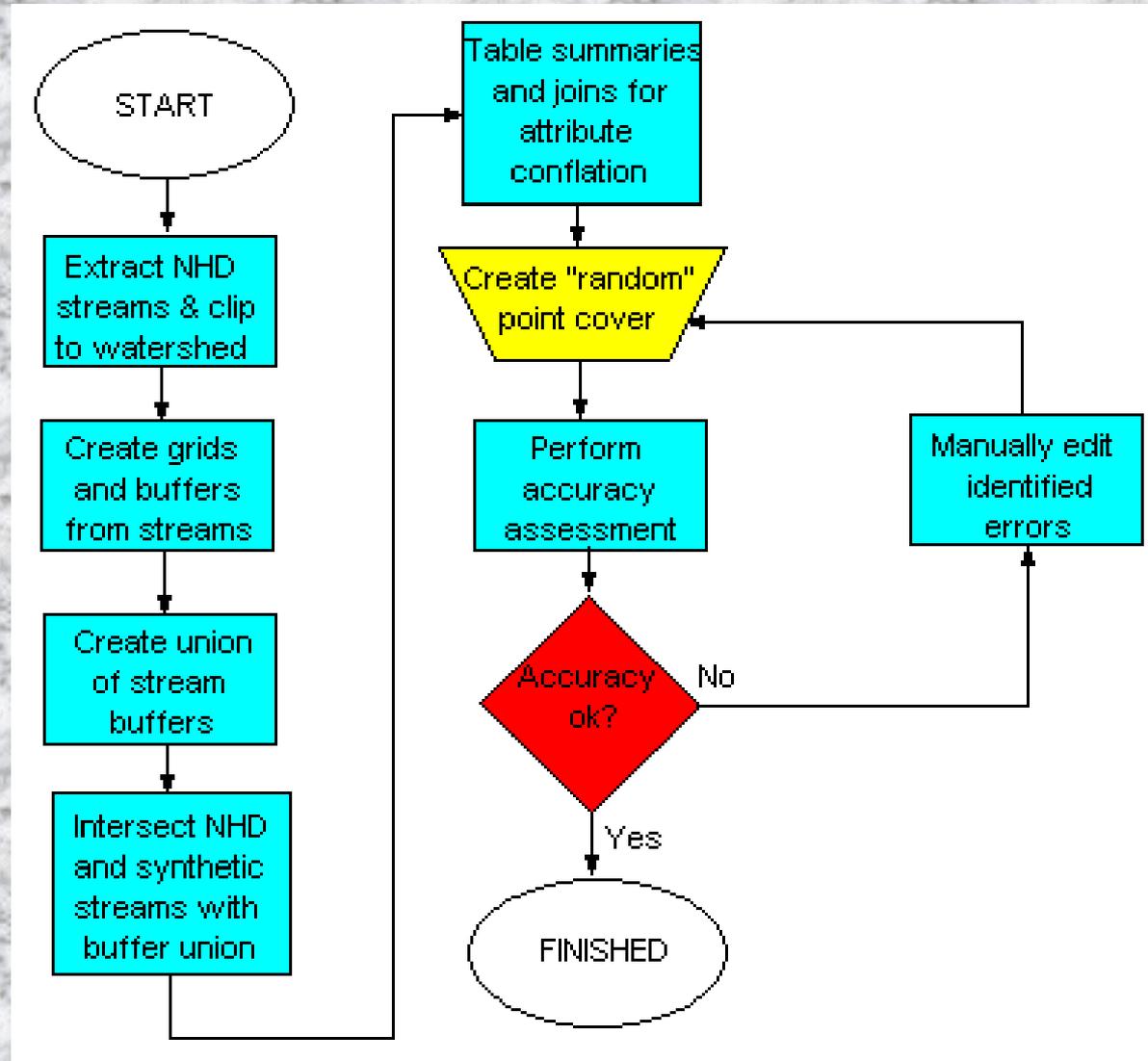
II. Processing steps

F. Synthetic and NHD stream conflation

- 1. Preliminary procedure utilizes ARC, GRID, and ArcView**
- 2. Incorporates the use of synthetic and NHD stream buffers (ARC & GRID processing)**
- 3. Series of joins implemented in ArcView to conflate attributes**
- 4. Semi-random sampling accuracy estimated at approximately 90%**

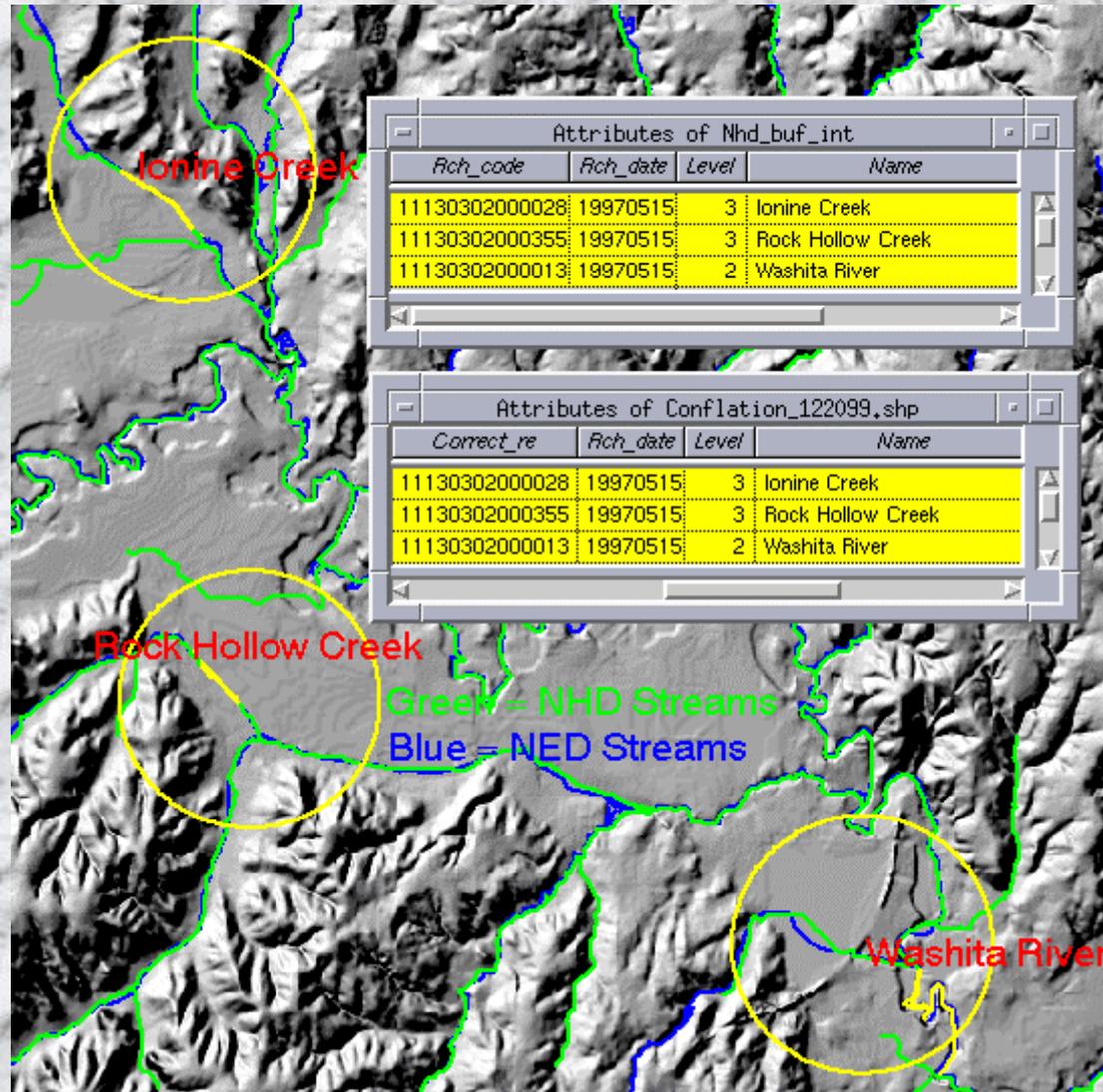
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Synthetic and NHD stream conflation flow diagram



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Synthetic and NHD stream conflation example



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III. Summary

- A. Preliminary methods have been developed for complete NED-H data set creation**
- B. Methods include both blind-pass processing algorithms as well as manual editing methods**
- C. Continued work will attempt to increase automation and efficiency of processes.**