DRAFT Minutes from Spatial Analysis Project Technical Team Meeting
7/16/2001
Cloquet Forestry Center
10:00 AM to 3:00 PM

Attendees: Bill Befort, Dan Boss (J. W. Sewell Co.), Daren Carlson, Chris Edgar, Lee Frelich, Lawson Gerdes, Tim Jones, Jim Manolis, Smita Mehta, Tim O'Hara, Scott Robinson (J. W. Sewell Co.), and Mark White

Submitted by Jim Manolis and Daren Carlson.

Meeting opened with introductions.

Jim Manolis provided an overview of the spatial analysis project for the benefit of Dan Boss and Scott Robinson who were visiting from Sewell Inc, the contracting company for the photo interpretation portion of the project.

Dan Boss then provided background of the J. W. Sewell Company and was followed by Scott Robinson who highlighted the photo interpretation steps.

Photo interpretation procedure

The following are the main points of Scott Robinson's description of the photo interpretation procedure:

- Scott Robinson is the sole interpreter for all photos with review by a second interpretor at J.W. Sewell Co. and interpreters from Minnesota.
- Interpretation is performed stereoscopically from contact prints onto acetate overlays. Acetate overlays are then scanned and auto-vectorized. Digital elevation models (DEMs) and Digital Ortho Quads (DOQs) are used for image rectification.
- Camera calibration values will be averaged for an entire county given the difficulty to discern the actual camera used for a given photo. Calibration differences between cameras are minimal and averaging should have little impact on overall accuracy.
- Experienced photo-interpretors in Minnesota will periodically examine a subset Scott Robinson's interpretations. These interpreters will work with Scott to resolve any discrepancies and ensure interpretation accuracy. Detailed quality control standards are in the contract.
- Scott Robinson and Dan Boss have conducted initial ground truthing and will return to Minnesota for more ground truthing after Scott has completed more interpretation.
- A total of 6 staff members from J. W. Sewell will work on the project in some capacity.

Problems/issues of photo interpretation

- Lawson Gerdes said some DOQs have edge-matching errors and DEMs along the shore of Lake Superior are missing information. These errors may negatively impact the rectification process and it was suggested that J.W. Sewell Co. contact Tim Loesch or Steve Gallay about these issues.
- Several people emphasized the importance of minimizing differences between the physical aspects (i.e. scale, resolution) of the photos from the three time periods.

- The minimum mapping unit (MMU) of 10 acres is a guideline and smaller inclusions will occur, but is a good minimum for 1:24,000 scale photos. It is important to keep in mind the different scales of the 3 photo sets and try to stay as close to 10 acres as possible.

Interpretation/ Classification questions

Scott Robinson presented the Technical Team several questions about the classification scheme. The following are the decisions/answers to those questions:

- In general, disturbance type is identifiable only for young stands and most polygons default to unknown disturbance.
- Two classes identifying dead trees will be added to the "Other" category. These classes will be DC for dead conifer and DH for dead hardwood.
- An upland cedar class, UC, will be added.
- In some cases the two photos of a stereo pair are from different dates and changes have occurred from the earlier to later date. In these cases, the information from the most recent photo will be used.
- The cover type categories should reflect the vegetation more than other physical parameters. For example, in some cases aspen/fir are in lowland areas but should not be called lowland mixed hardwood/conifer class (LM).
- Young jack and red pine can be difficult to distinguish. In these situations, the pine class will be used.
- Linear types – the narrowest roads reliably visible are 60 feet wide. Roads > 60 feet wide will be classified into 4 categories. An additional category of roads < 60 feet wide will be used when visible, but caution must be used when analyzing roads of these sizes.
- Water boundaries will be delineated as exists on each photo. It is up to the spatial technical team to decide how to deal with seasonal fluctuations when comparing between the different photo years.
- The classification key does not need to be a publishable document, but rather a dichotomous key that clarifies the decisions made by the interpreter. Examples of extreme cases and the 5-10 most common cover types should also be provided. This key could be reproduced on a CD with photo examples.

Future Modeling

Tim Jones provided a short overview of the capabilities of the new Harvest module for LANDIS. A powerpoint presentation of the overview is available and has been attached to the email containing these minutes. Discussion followed Tim's presentation and the following are highlights:

- Some of the proposed modeling scenarios, i.e. clustered and salvage harvesting, are not directly possible with the Harvest module. It is anticipated that indirect methods can circumvent these deficiencies.
- Prescribed burns were suggested as another management option and increasing prescribed burns will be included as another scenario.

- Tim O'Hara requested an additional scenario be tested. The specifications of the scenario are as follows:

Avg. clearcut size	Dispersion method of clearcuts	Acres clearcut	Acres thinned	Acres in partial cuts/ 2 entry systems	Acres in selective harvest	Rotation age
Increase	Increase clustering	Increase	Increase	Increase	Increase	Economic

Acres in protected areas	Acres in high produc-tivity areas	Clustering of prot. Areas & prod. Areas	Coordination among landowners	Amt. Of nat. dist. - Wind	Amt. Of nat. dist. - Fire
Current system	Increase	Current system	Increase	Current system	Current system

- The "current system" of forest management requires more specification. Results from the FRC sponsored survey, "Status of Timber Harvesting and Silvicultural Practice in 1996" (accessible at http://www.frc.state.mn.us/Info/MFRCdocs/Sil-Har-PDF-1.pdf) was identified as an acceptable starting point with the following concerns:

    - The modeled regions, Laurentian Highlands and Cass County, may deviate significantly from state averages presented in the survey mentioned above. Alternate information sources, focused on those regions, should also be used.

    - The survey is already 5 years old and practices may have changed since then.

- By July 27, Tim Jones will provide Lee Frelich and Smita Mehta, with a base cover map of an area (e.g. LTA level) smaller than the main model extent. Lee and Smita will then test if all the proposed scenarios are feasible.

Next steps

Tim Jones and Lee Frelich will email a refined list of modeling scenarios to the Strategy Team for review. The Technical Team will discuss these further at their August Meeting, and modify where necessary. The scenarios will then be presented to the Strategy Team via email, and will discuss at their September or October Meeting.

Jim Manolis will be contacting Technical Team members to schedule another meeting for mid-August.