Future Directions of the Soil Survey Committee - Report

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How was the report developed?

- E-mail discussions with committee members.
- Broad distribution requesting thoughts (State Soil Scientists, Field Staff, BLM, Forest Service, Consultants)
- Great Input!

Charges for the Committee

1. Review Report from 2006 North Central Region Committee on Future Direction of Soil Survey. Gather recommendations from past national and regional committee reports for material on this subject.

Charges for the Committee

2. Invite members of NCSS to produce white papers for discussion and possible presentation in the Future of Soil Survey Forum in conference.

Charges for the Committee

3. What are the reasons that students do not apply for federal jobs when they are made available?
4. Explore options for an electronic or internet clearinghouse that improves information flow on positions, student applicants, scholarships, grants, and contacts within NCSS.
5. Promote internships and career intern program in federal government to provide more opportunities for high school and college age students to consider soil science as a career.

Charges 3-5 - Recruitment

- Student trainee positions are extremely important! Increase participation if possible.
- Work on logistics. Announcement of opening and closing date.
- Use trainees wisely to make the experience enjoyable.

Charges 3-5 - Recruitment

- Re-think the OPM requirement – University departments have changed.
- Consider requiring GIS
- Consider environmental science classes.

Charges 3-5

- We are all seeing decreasing numbers.
- Develop strategies to focus on high schools in urban, suburban and rural schools. Soil judging example.
- Take advantage of current and future opportunities.
- Need for cooperation between Soil Survey and Universities.

Charge 2: Summary of the Future Directions of the Soil Survey

We foresee the Future in 4 phases:

1. completing the once-over mapping for the US
2. improving the current display of information and interpretations
3. applying digital mapping techniques to provide a better understanding of soil and landscape relationships
4. applying research in conjunction with University Cooperators to answer the needs of society

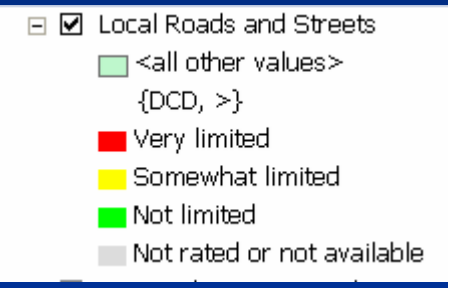
Phase 1 – Completing the Survey

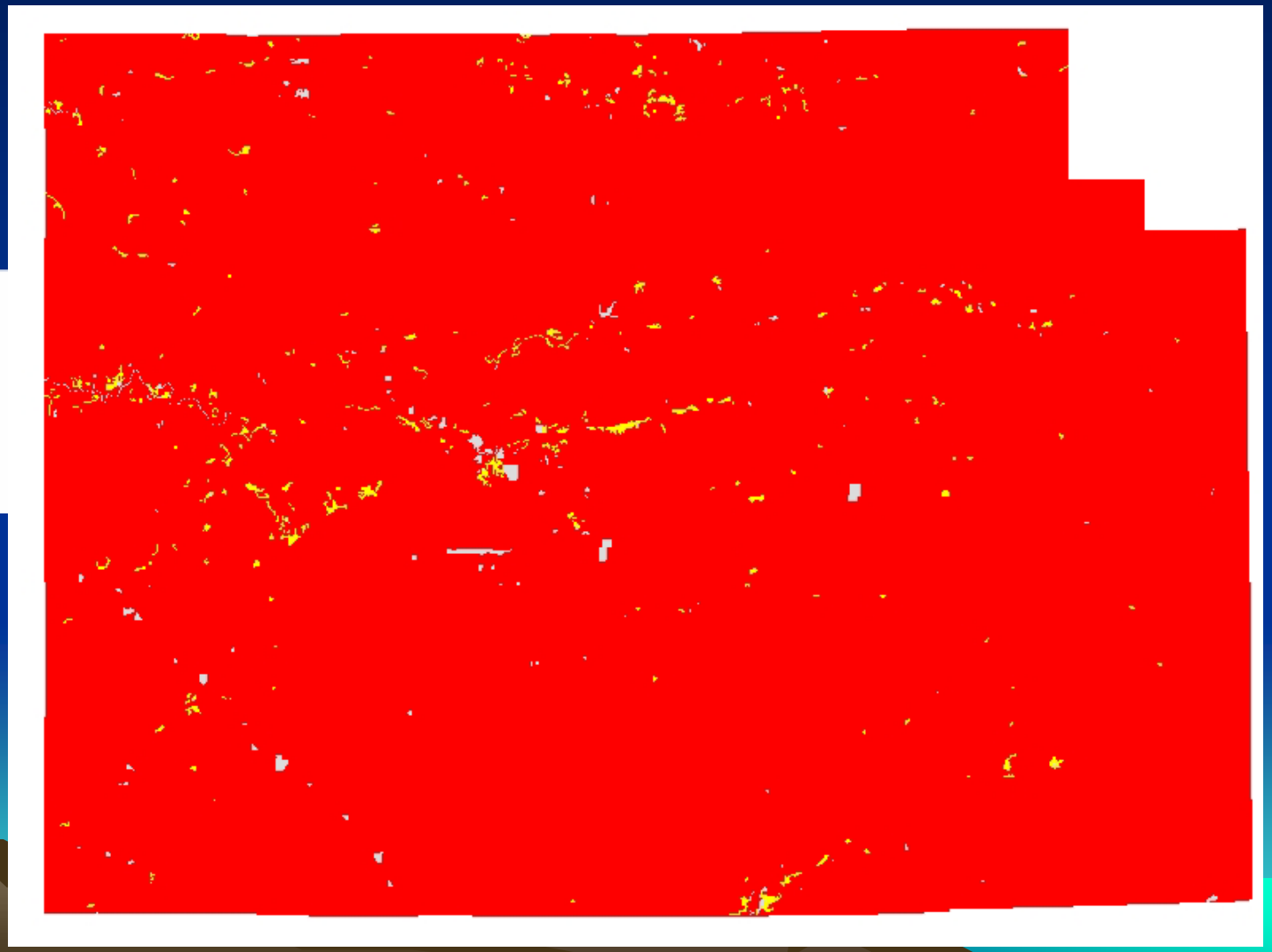
- Great goal and tremendous progress so far.
- MLRA concept is excellent.
- Be cautious on touting the completion of once-over.

Phase 2- Interpretations

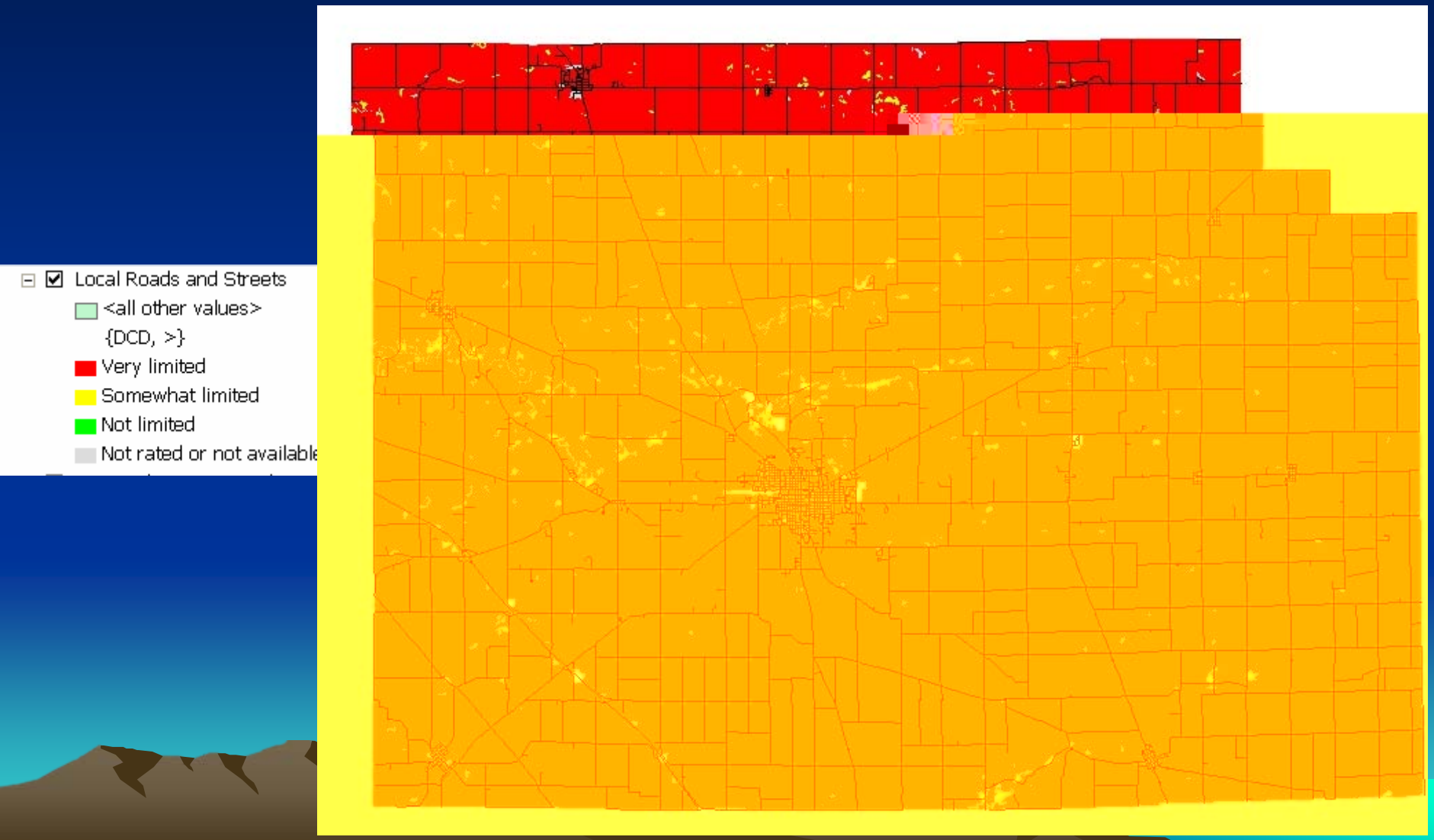
- Web Soil Survey is an excellent delivery product.
- Now we need to focus on the information we are delivering
- Poor or unrealistic interpretations are a poor reflection of the agency and pedologists

Clinton County, Indiana
Fuzzy Interpretations, Roads and Streets,





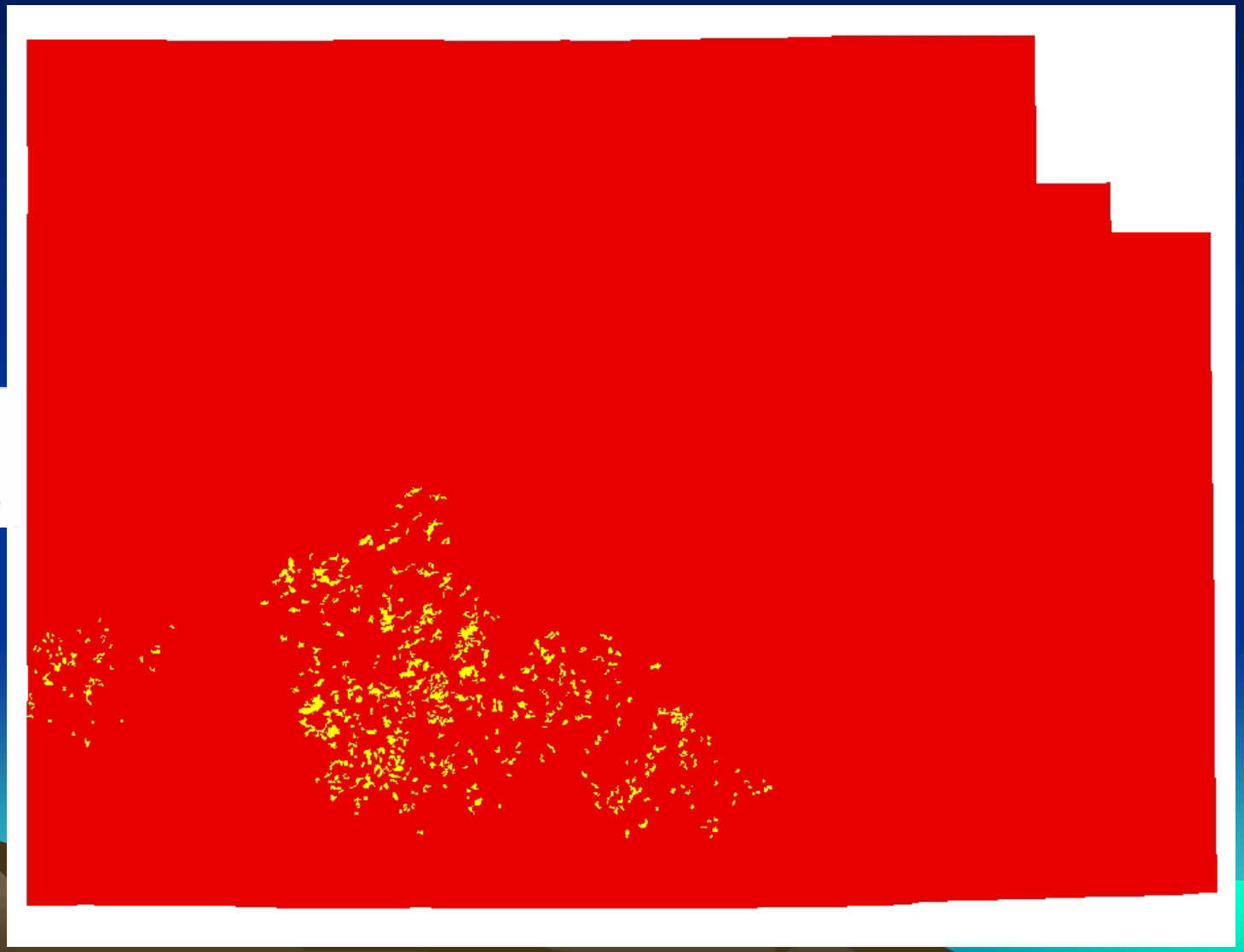
Clinton County, Indiana
Road Map, Fuzzy Ratings Roads & Streets

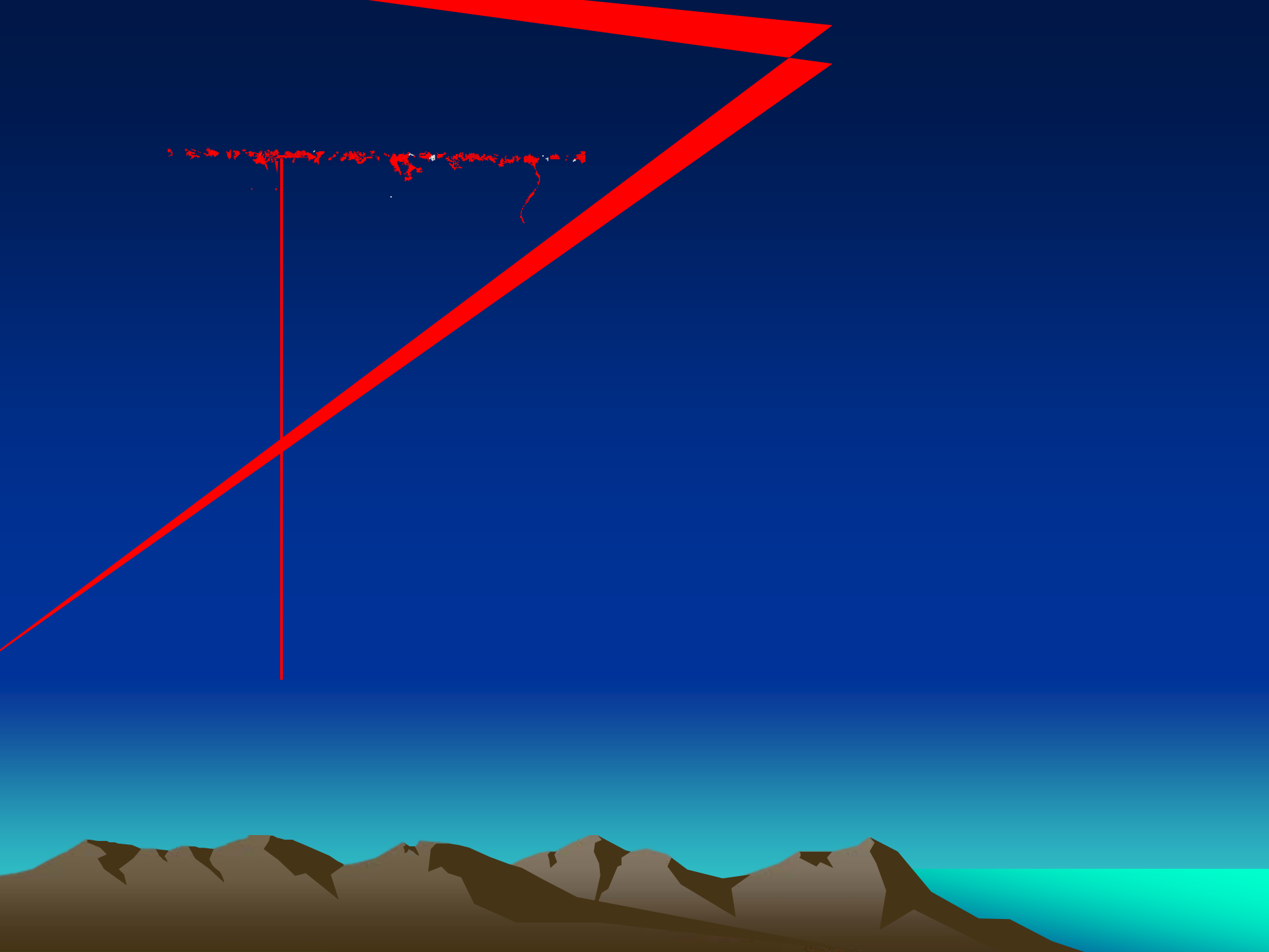


Clinton Co. Indiana, NASIS report, Fuzzy Ratings, Limitations for Corn & Soybeans

Limitations for Corn & Soybeans

- Very limited
- Somewhat limited
- Not limited
- Not rated or not available





CONUS-SOIL

Penn State's Earth System Science Center

- State Soil Geographic Database (STATSGO) for soil physical and hydraulic data
- Raster format – good for models
- Gives soil texture, depth-to-bedrock, bulk density, porosity, particle-size fractions, available water capacity, hydrologic soil group, etc.

Phase 3 – Digital Mapping

- Currently we go from paper to digital.
- Must convert to utilizing digital mapping models to illustrate the continuum.
- Raster maps can provide multi-scale maps depending on intended use
- Publish site specific data and develop methodology to incorporate site data into mapping models

Phase 4 – Societal Issues

- Provide answers to societal needs.
- Divert some soil scientists with research interest to work with University Cooperators to solve a problem and fill a need.

Issues we could focus on:

- Landscape hydrology as it relates to landslides and flooding
- Soil carbon storage potential as it relates to global warming
- Soil shrinking and swelling impacts to roads and structures
- Gypsum and pozzolanic reactions on building foundations

More Issues

- Loess subsidence and impacts to roads and structures
- Erosion and nutrient runoff on surface waters of the US
- Baseline geochemical trace element studies related to pedogenesis
- Onsite wastewater disposal studies
- Anthropogenic impacts to soil that affect sustainability
- Impacts of permafrost melting due to global warming.

More

- Ecological system relationships
- Wetlands and hydric soil function
- Carrying capacity of soils within the US to produce food and fuel
- Acid sulfate producing soils and sediments
- Many more……

Potential Bureaucratic Challenges

- Soil Survey Program should provide soil survey to the States and other public agencies related to community and resource development:

"for protecting and improving the quality of the environment, meeting recreational needs conserving land and water resources, providing for multiple uses of such resources, and controlling and reducing pollution from sediment and other pollutants in areas of rapidly changing uses, including farmlands being shifted to, other uses, resulting from rapid expansions in the uses of land for industry, housing, transportation, recreation, and related services."

Soil Survey Within NRCS

The primary customers of NRCS are defined in the Strategic Plan 2005-2010 as:

- Farmers and ranchers, people who own, operate, or live on farms and ranches;
- Other members of the private sector who support production agriculture and natural resource conservation;
- Governments and units of government with responsibility for natural resource use and management; and
- Non-profit organizations whose mission aligns with aspects of natural resource management (USDA-NRCS, 2006).

Committee Recommendations

- Continue the committee with a more narrow focus.
- We need to ask ourselves “So What and Who Cares”
- Less focus on mapping in the future
- Interpretations with additional information on Ecological Site Descriptions, Data for model input, soil-plant relationships

Recommendations

- Embrace new technology.
- Develop methodology for when and how to apply new technology
- Build a focus group to examine and prioritize future users.

Thinkin[redacted]head…..

Blogs, e[redacted]pedia, or [redacted]s