National Soil Survey Program

Implementing the "New Soil Survey"

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Mendora, North Dakota

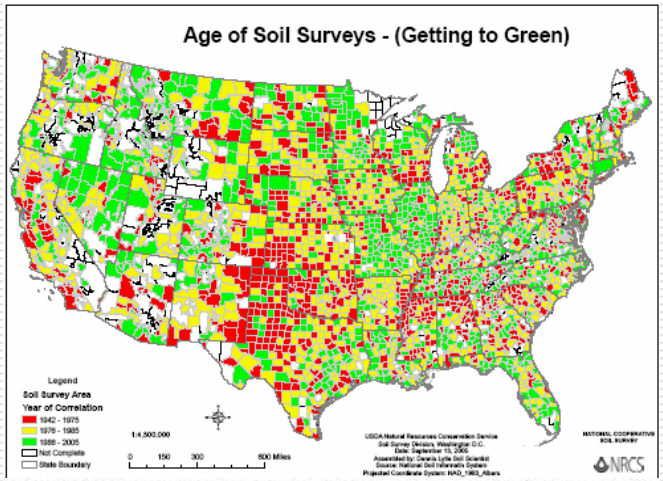
Soil Survey Division

- The Chief's Challenge – Find a better way to do Soil Survey's
- The vision is to develop and deliver an;
  - accurate and consistent,
  - always available,
  - always up-to-date,
  - seamless digital soil survey of the nation,

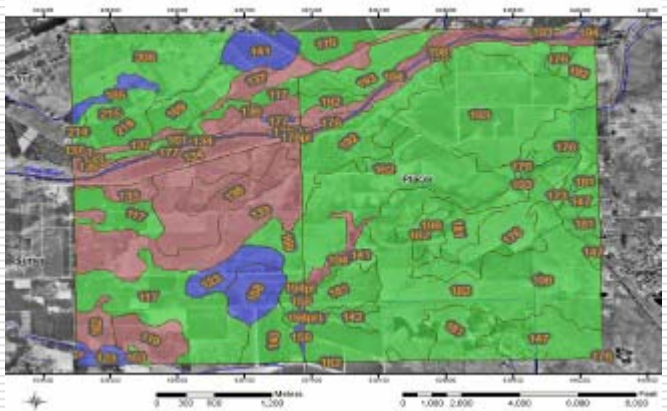
  and products that meet current and emerging user needs.

100 plus years of patch work

- Federal, State and Local contributions
  - Enabled lower cost and increased buy-in
- County by County approach
  - Resulted in inconsistency across administrative boundaries



MAP UNIT HYDRIC RATING RATING FOR PLACER COUNTY, CALIFORNIA, WESTERN PART; SUTTER COUNTY, CALIFORNIA; YUBA COUNTY, CALIFORNIA

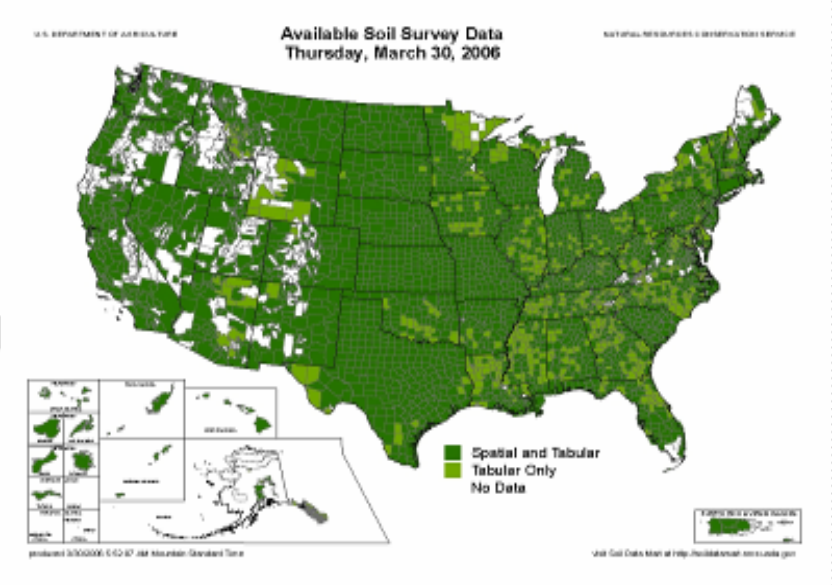


Initial Surveys and SSURGO Digitizing Remain

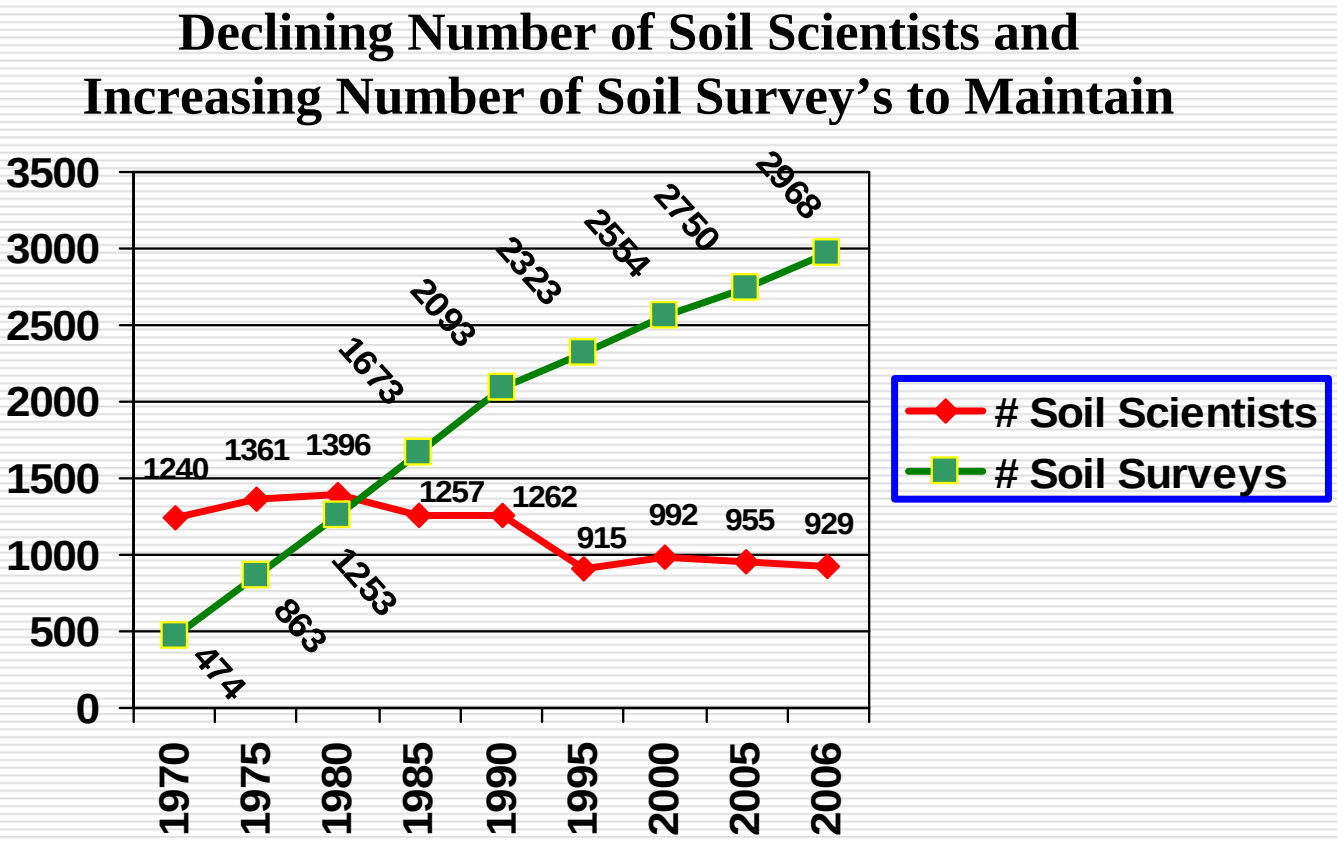
- Private and Tribal lands 61.2 million acres left

Land Owner	Total Acres	Acres Remaining to Map	% Left	Yrs Left
BLM	257,886,837	31,997,688	12%	38
USFS	192,730,805	58,017,503	30%	101
NPS	73,366,967	8,773,686	12%	71
Other Federal	118,310,239	10,201,642	9%	31
Native American	93,522,644	16,272,283	17%	14
Private Land	1,535,373,931	45,710,547	3%	14
Totals	2,271,191,423	170,973,349	8%	27

- SSURGO
  - Complete on 2,463 Survey Areas
  - 500 to go by the end of 2007

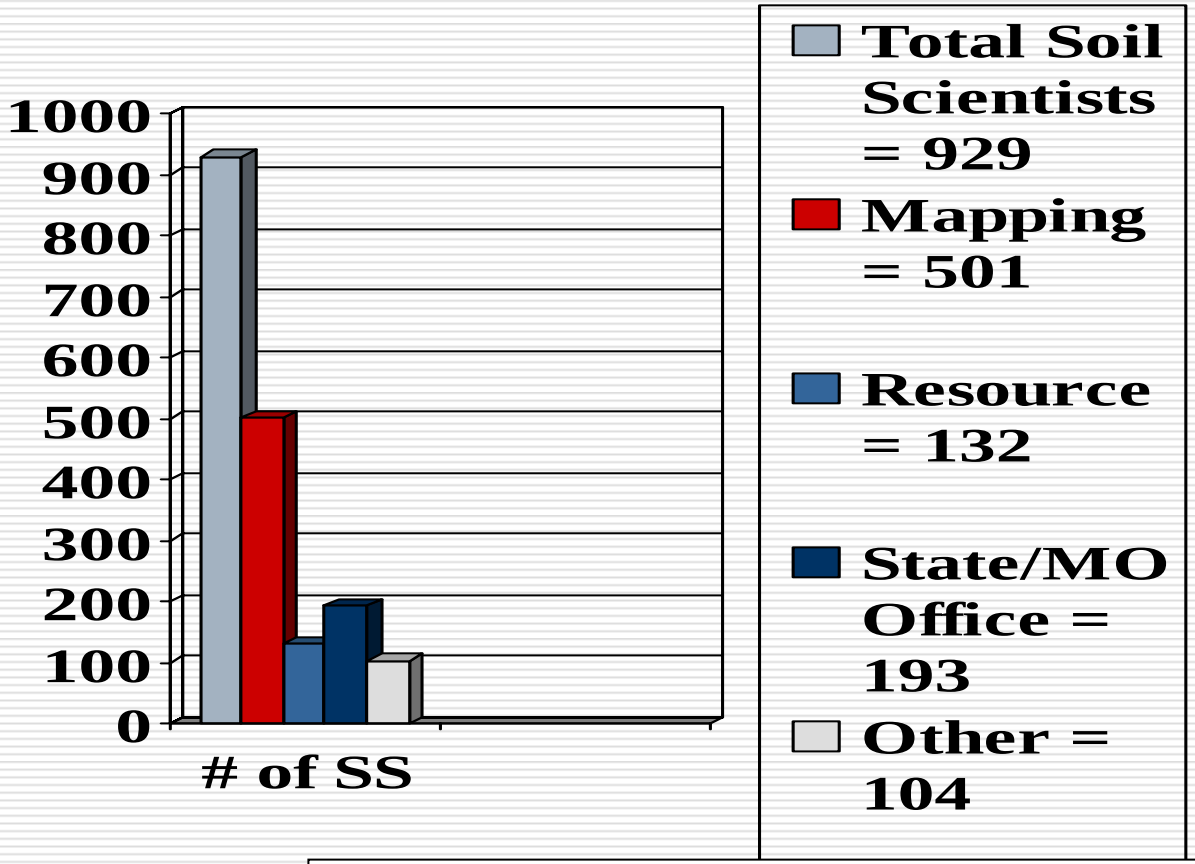


Soil Scientists and Workload



Note: The number of SS devoted to field mapping has decreased from 875 in 1983 to 501 in 2006 due to shift in Technical Soil Services

NRCS Soil Scientist Numbers



NRCS has 929 Total Soil Scientists in all programs. They make up about 8.0 percent of the NRCS staff.

Establish The "New Soil Survey" by Major Land Resource Areas

To increase productivity and consistency (quality) of the Soil Survey

1. Establish 145 Permanent areas and 143 offices
   - Review and revise policy in NSSH
   - Implement a new CO-02 fund allocation process
2. Implement New Technologies
   - Landscape predictive models to improve productivity and consistency
   - Standard HW/SW configuration
3. Publish to the Web Soil Survey
   - Implement a paperless soil survey, start to finish

FLAG
Federal LandsAdvisory Group

1. **Bill Ypslantis, BLM**
2. **Pete Biggam, National Park Service**
3. **Randy Davis, USFS**
4. **George Teachman, DOD**
5. **Dennis Lytle, NRCS**
6. **BIA**

Chair - Micheal Golden

- **Activities for Initial soil mapping on "ALL" Lands**

NCSS Advisory Group

- Toby O'Geen, University of California, Davis
- Cynthia Stiles, University of Wisconsin, Madison
- Mary Collins, University of Florida, Gainesville
- Joey Shaw, Auburn University, Auburn
- Mickey Ransom, Kansas State University, Manhattan
- Jim Thompson, West Virginia University, Morgantown
- Curtis Monger, New Mexico State, Las Cruces

- Ad Hoc - Dick Arnold, Retired

Visionary Look:
How should "Soil Survey" change for the Future?

State Conservationist Advisory Group

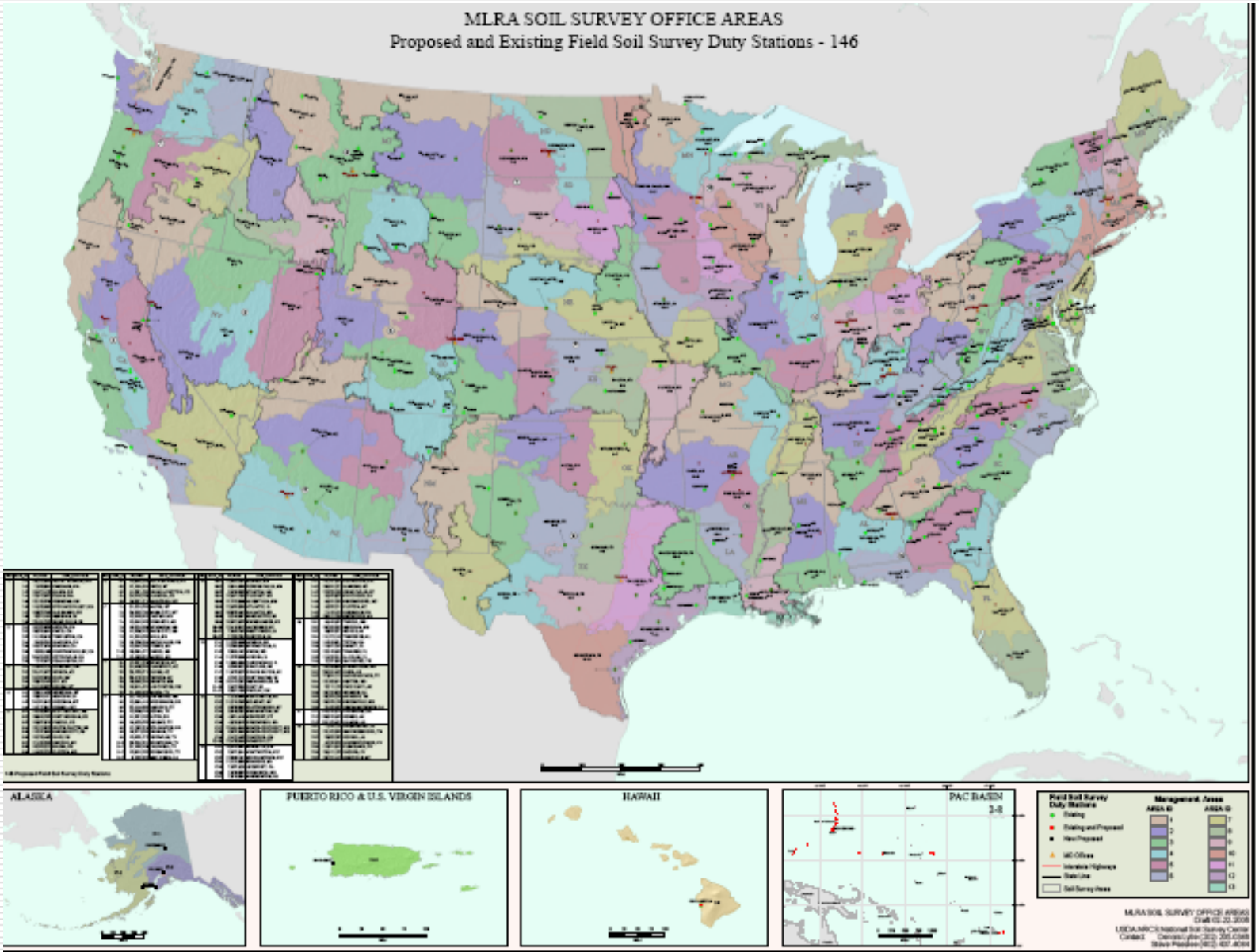
- Judy Doerner, Vermont
- J.R. Flores, North Dakota
- Don Gohmert, Louisiana
- Allen Green, Colorado
- Jane Hardisty, Indiana
- Harold Klaege, Kansas
- Richard Sims, Idaho
- James Tillman, Georgia

And Rosendo Trevino, Former State Conservationist, New Mexico

Other Advisory Groups to Director

- **National Soil Interpretation Advisory Group**
  Chair - Karl Hipple
- **National Soil Business Advisory Group**
  Chair - Dennis Lytle
- **National Research Needs Committee**
  Chair - David Hammer

New Soil Survey
145 Soil Survey Areas and 143 Offices



MLRA Soil Survey "Field" Staff

New MLRA Soil Survey Staff w/out Reimbursables

Staff per Office	1	2	3	4	5	6	7	Total 501 Staff
Number of Offices	15	29	48	30	18	4	1	145 Offices

Current Soil Survey Office Staff

Staff per Office	1	2	3	4	5	6	7	8	Total 501 Staff
Number of Offices	104	71	46	18	5	8	1	2	255 Offices

MLRA Regional Office “MO”Staff

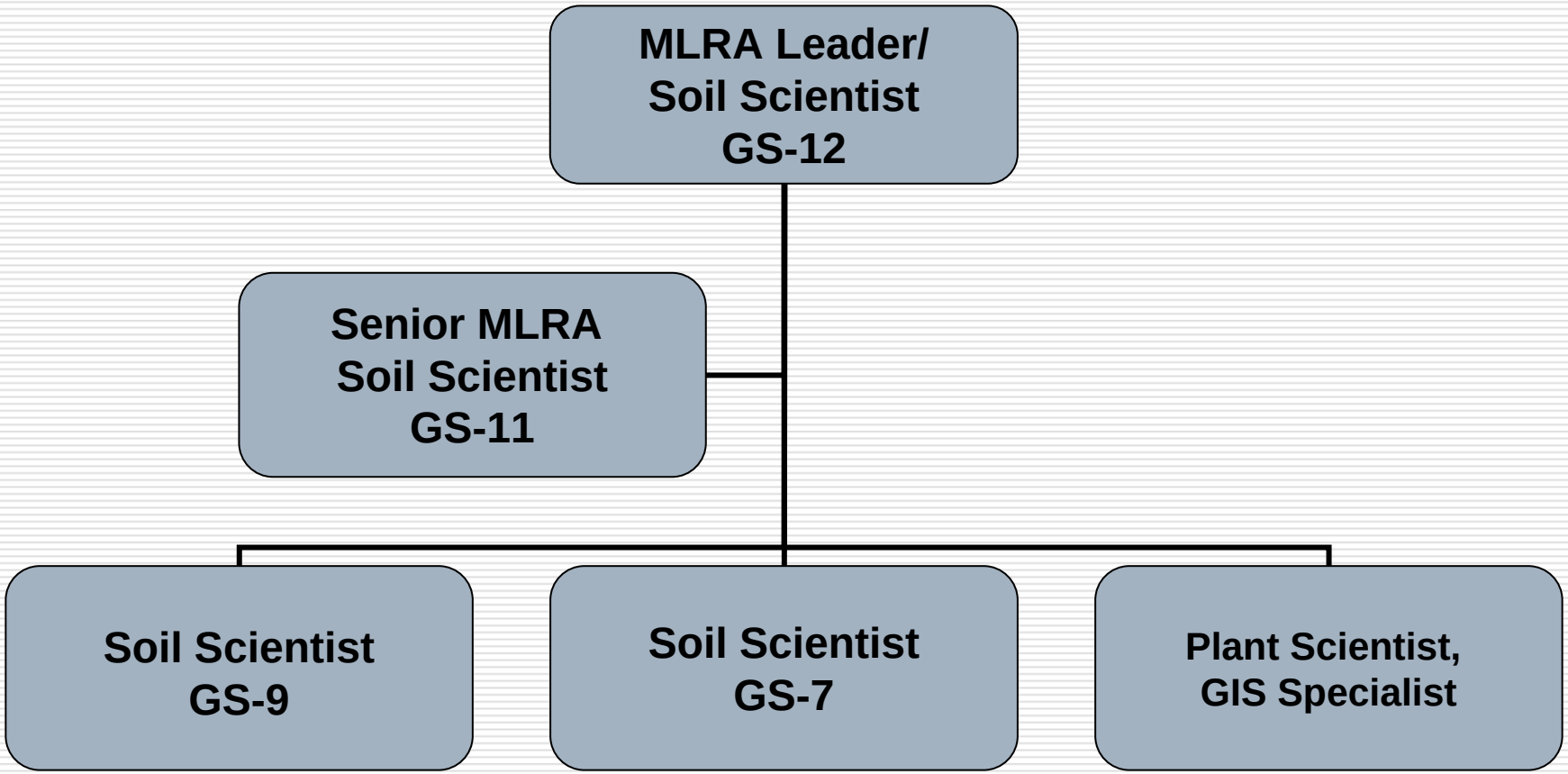
Current MO Staff

									Total
Staff per Office	4	5	6	7	8	9	10	13	126 Staff
Number of Offices	1	5	3	2	2	1	1	2	18 Offices

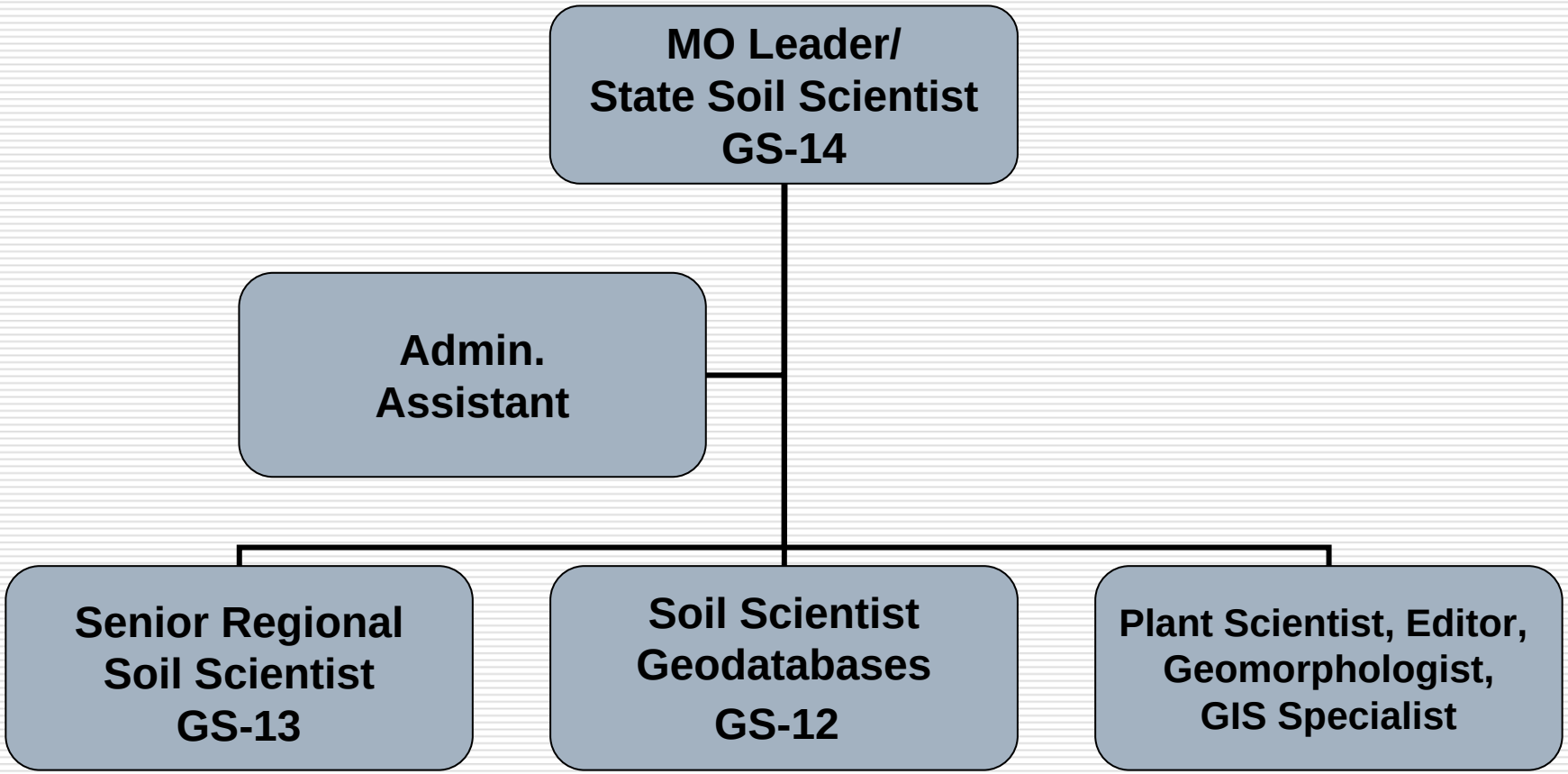
New MO Staff

Staff per Office				Total
	4	5	6	85 Staff
Number of Offices	7	9	2	18 Offices

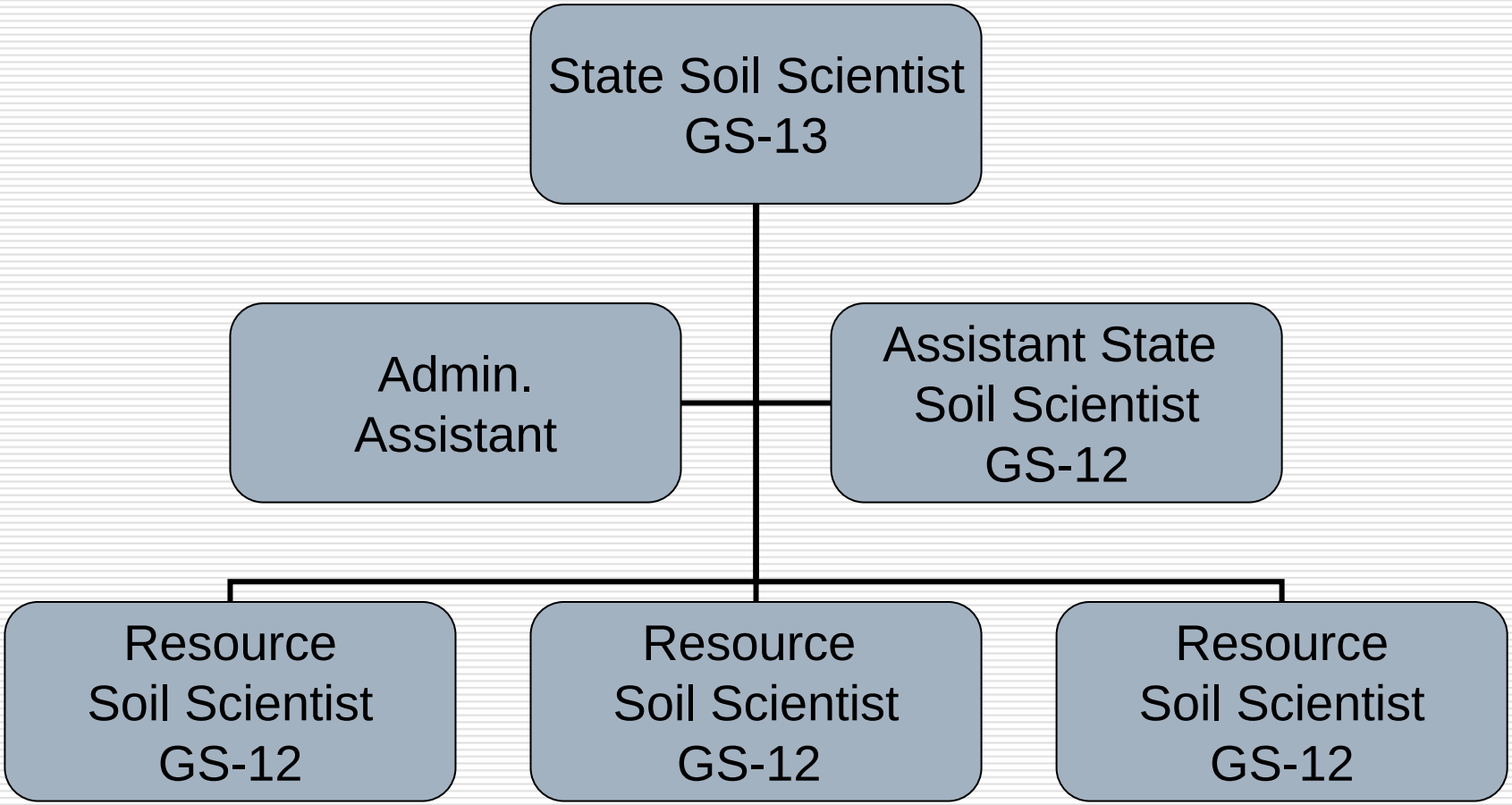
New MLRA SSO Staffing Plan



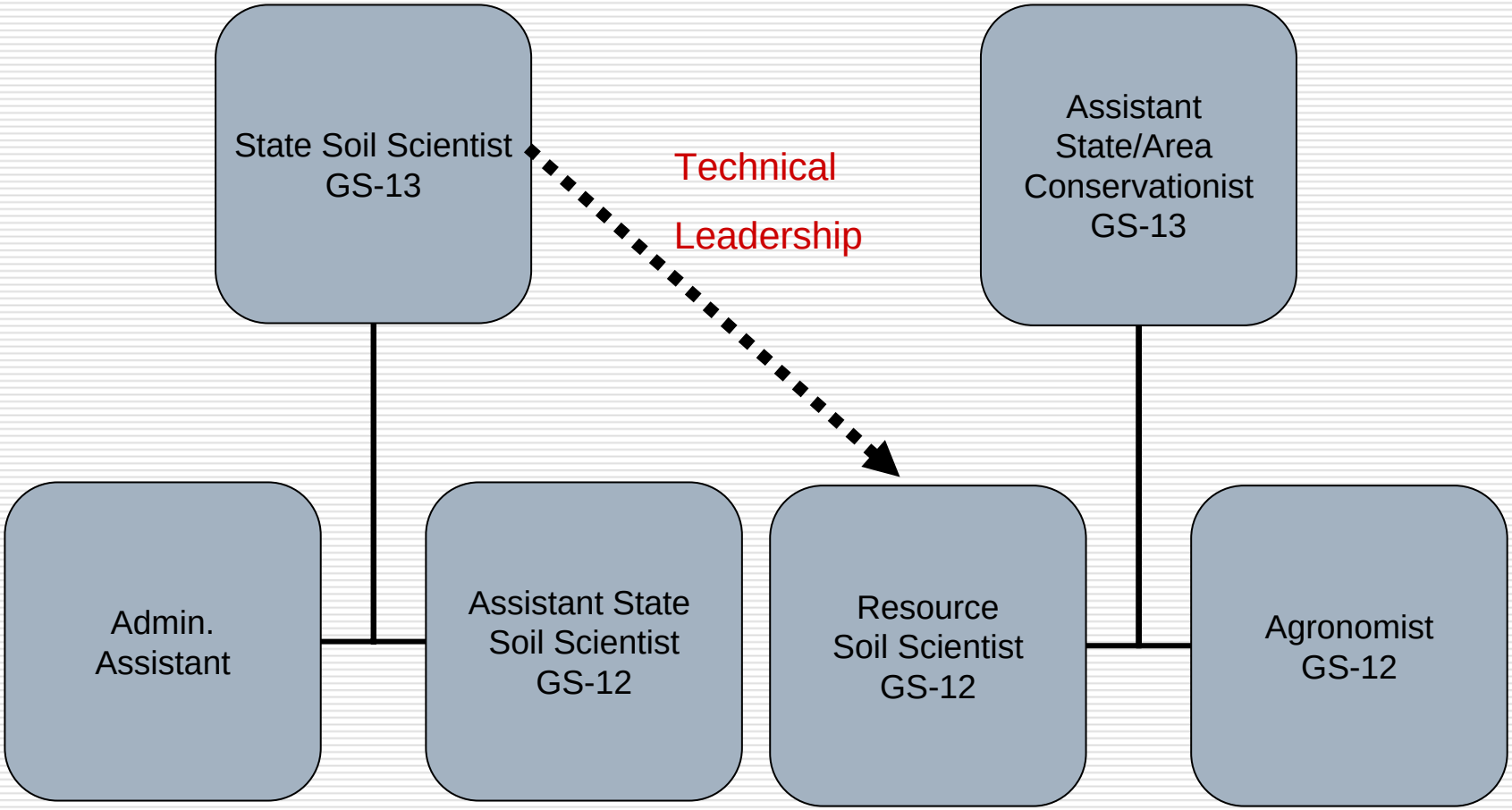
New MLRA Regional Office Staffing Plan



New SO Staffing Plan



New SO Staffing Plan



New Funding Formula Factors

State Office Funding_Base Staffing:

- States without MLRA Regional Office: 3 FTEs
- MLRA Regional Office States: 2 FTEs
- PR & DE: 2 FTEs
- RI and Pac Basin: 1 FTE

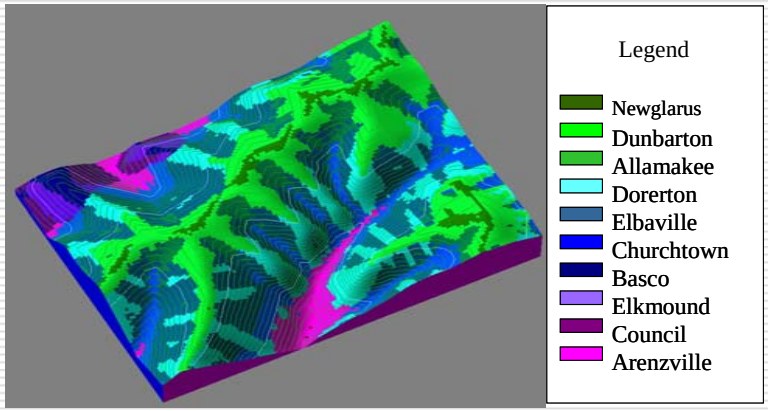
- Database or state complexity factor using total Official Series Descriptions, total Map Units and total Components. States get 0, .5 or 1 FTE depending on thresholds set for these items

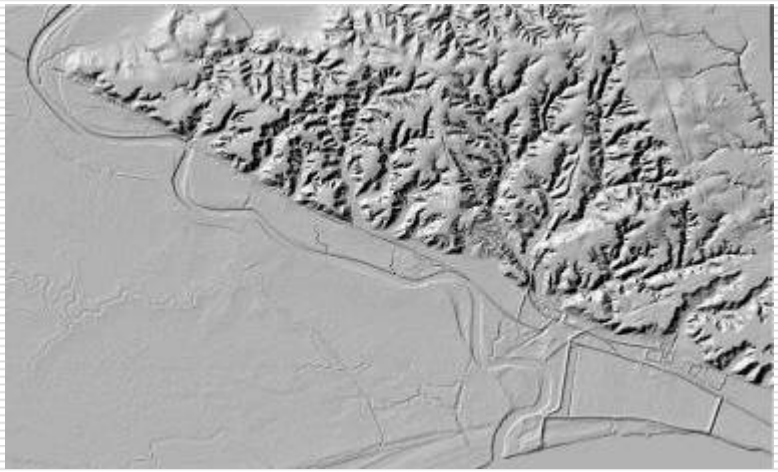
Soil Survey Staff Functions

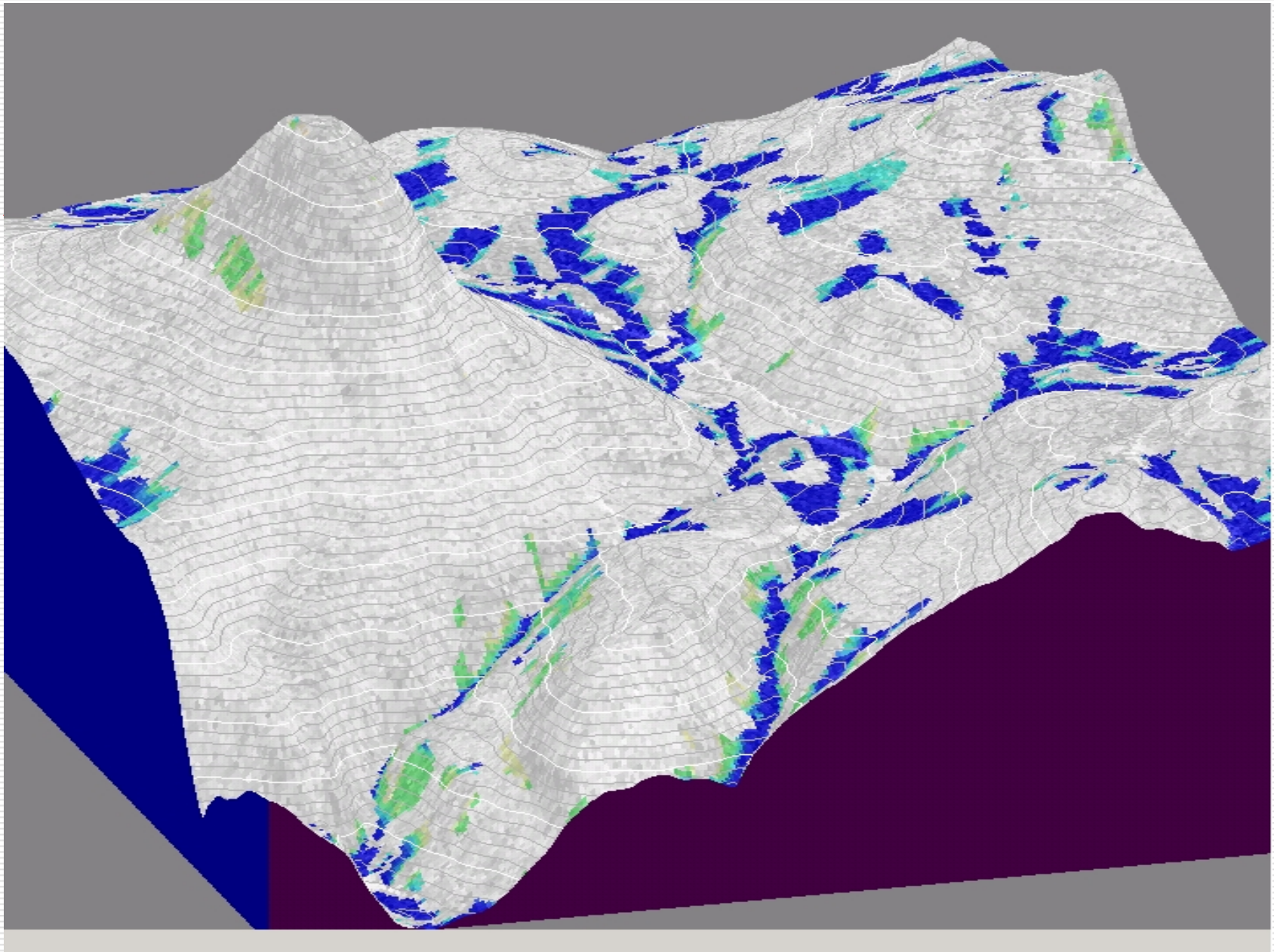
- **MO –** Leadership in the production and quality assurance of soil survey's for assigned multi-state geographic area.
- **SO –** State-wide technical soil services to provide customer and programs support and provide production soil survey coordination.
- **MLRA SSO –** Leadership in the production and quality control of soil survey's for assigned multi-county/state geographic area.

Aggressively Implement New Technologies to Increase Productivity and Consistency

- Soil Resource Inventory Toolbox
  - Field Data Collection
- Mobile Data Collection and Revision
  - National Geospatial Database (Checkout-Checkin)
- Soil Landscape Predictive Models
  - SoLIM, PURC, RASP, SIE
- Elevation Data
  - 10M, LIDAR, IFSAR

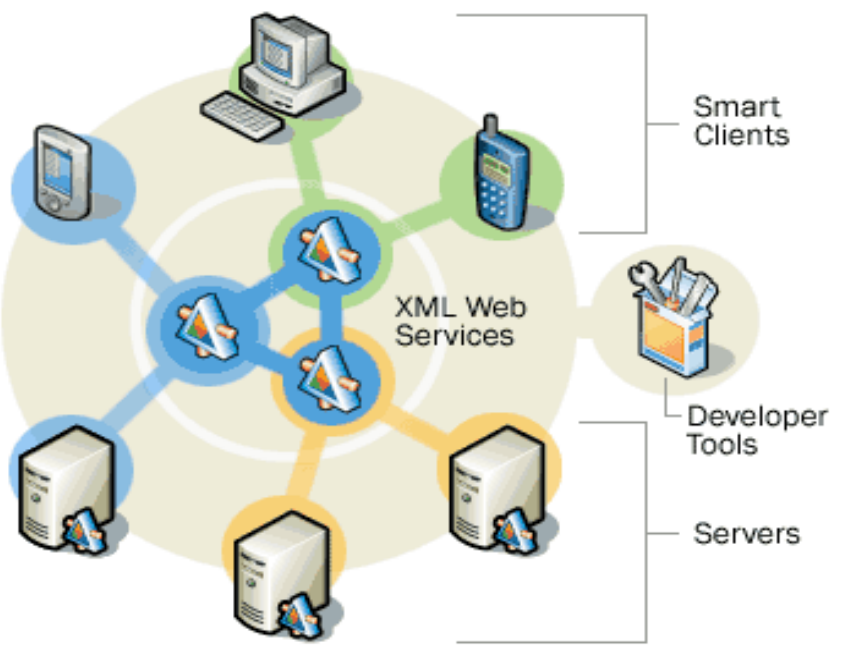




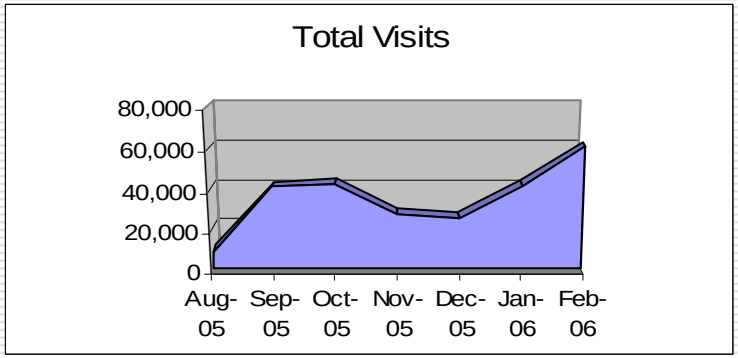


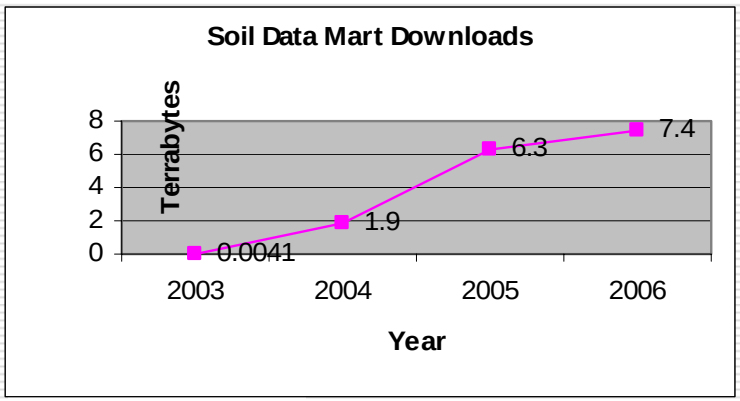
Enabling eGov Web Services

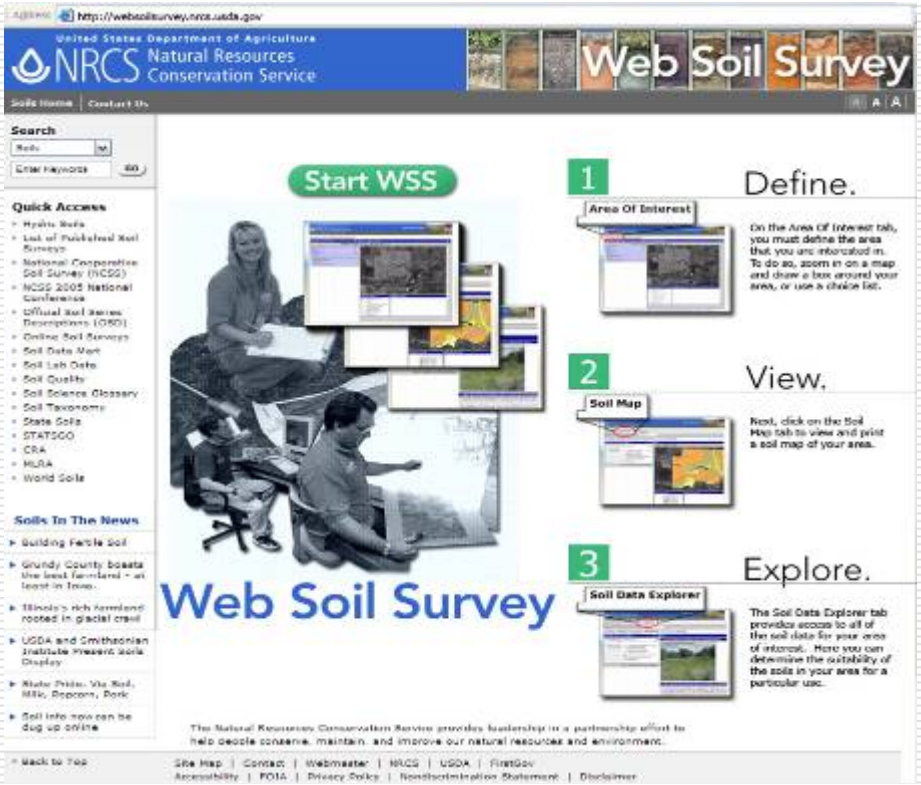
- NRCS on-line and self service systems
- Conservation
  - Technical Service Providers
  - FSA – CRP
  - Researchers/Modelers
  - EPA, ARS, Universities
- Commercial Enterprises
  - Crop Insurance, Manager
  - Chemical/Fertilizer
- Disaster Preparation and Recovery
  - FEMA/DHS, USDA



Web Soil Survey and Data Mart will Deliver all Publications and Data







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NCSS Partnership

Planning

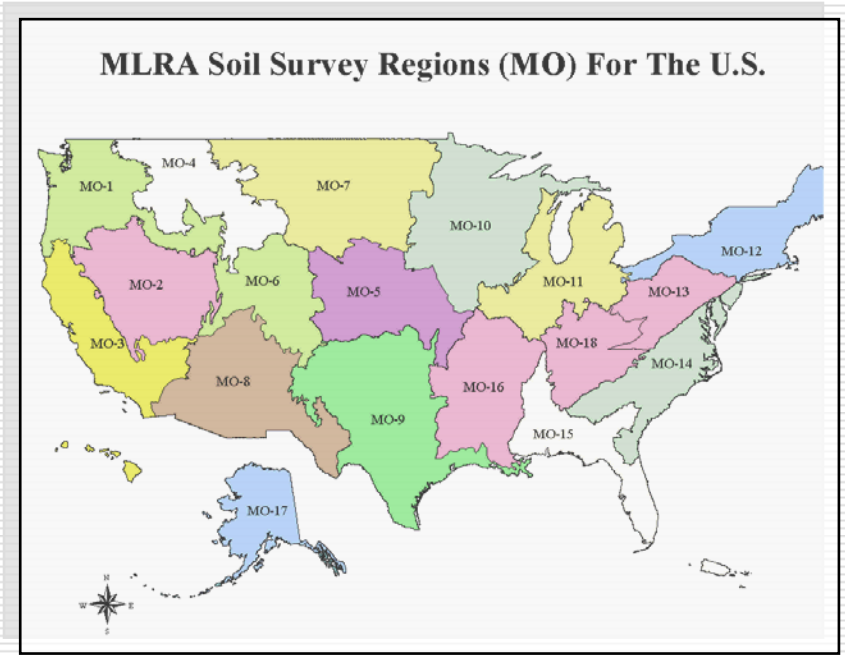
- Long Range Plans (145)
  - Identify Benchmark Landscape Catenas
  - Setting the Priorities
- Project Work Plan (1-5 Year)
  - Identify Thesis or other Work with partners
  - Identify Lab Analysis Needs
  - Identify Documentation Needs
- Annual Business Plan
  - Work the plan

More Efficient

Reposition MO staff

- From 126 to 85

  to reflect functional shift to field.



Finish The Job

Complete the Initial soil survey on:

Non Federal and Native American Lands, and

High Priority Federal Lands by December 2010.

- Detail - 25 to 50 soil and plant scientists per year
- Take advantage of experienced field soil scientists - before retirement
- Utilize New Soil Scientist Hires - to gain Mapping Experience
- Utilize Contractors from Private Sector

Implement the Plan

- Establish MLRA Soil Survey Areas and Offices on October 1, 2006

6. Fully implement by: January 1, 2010
   - 92 Existing offices already in place
   - 37 Offices in FY 07- 08
   - 16 Offices in FY 09

   - When Initial soil survey is completed
   - When Funding or Space is available

Employee Friendly

Staff Placement Plan

- State Conservationists (BOD) implement according to their "Migration" plan during FY07 and FY08.
- Accommodate staff – enable staff to plan their future, allow for attrition, allow for details.
- Formal Placement for remaining staff in FY09

Support Field

Acquire Computers and Software

- Systems to analyze geospatial data across
  - MLRA Soil Survey Project Areas - 145
  - MO Regions - 18
- Tablet PC's for data collection - 145

- Computer Purchase off the Top

Next Steps

1. Chief Knight Approved Plan
   1. May 11, 2006
2. Finalized Offices and Areas by State Conservationists
   - May 31, 2006
3. Brief NCSS Partnership at Regional Meetings
   - May and June, 2006
4. STC/MO offices submit a 3 year migration plan
   - July 30, 2006
5. Begin National Implementation
   - October 1, 2006

Thank You

Questions ???