

# Implementing the “New Soil Survey”

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**Director, Soil Survey Division**

**2006 South Region, NCSS Conference**

**Oklahoma City, Oklahoma**

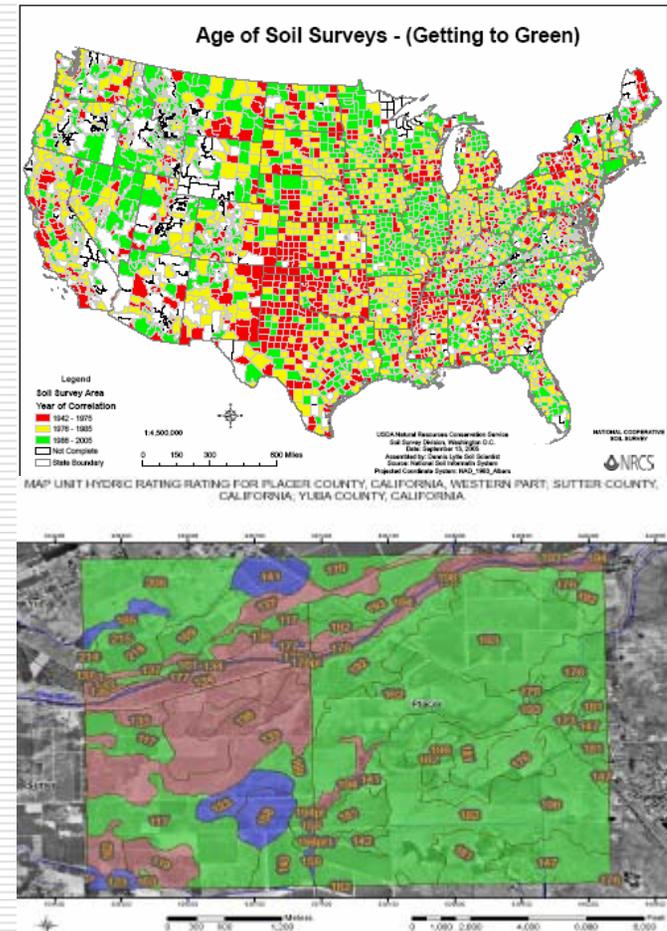
# Soil Survey Division

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- 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



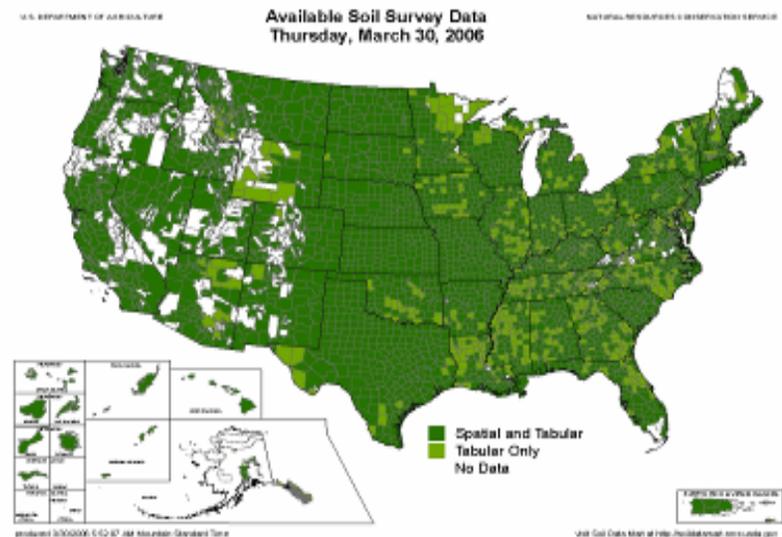
# Initial Surveys and SSURGO Digitizing Remain

➤ Private and Tribal lands **61.2** million acres left

➤ SSURGO

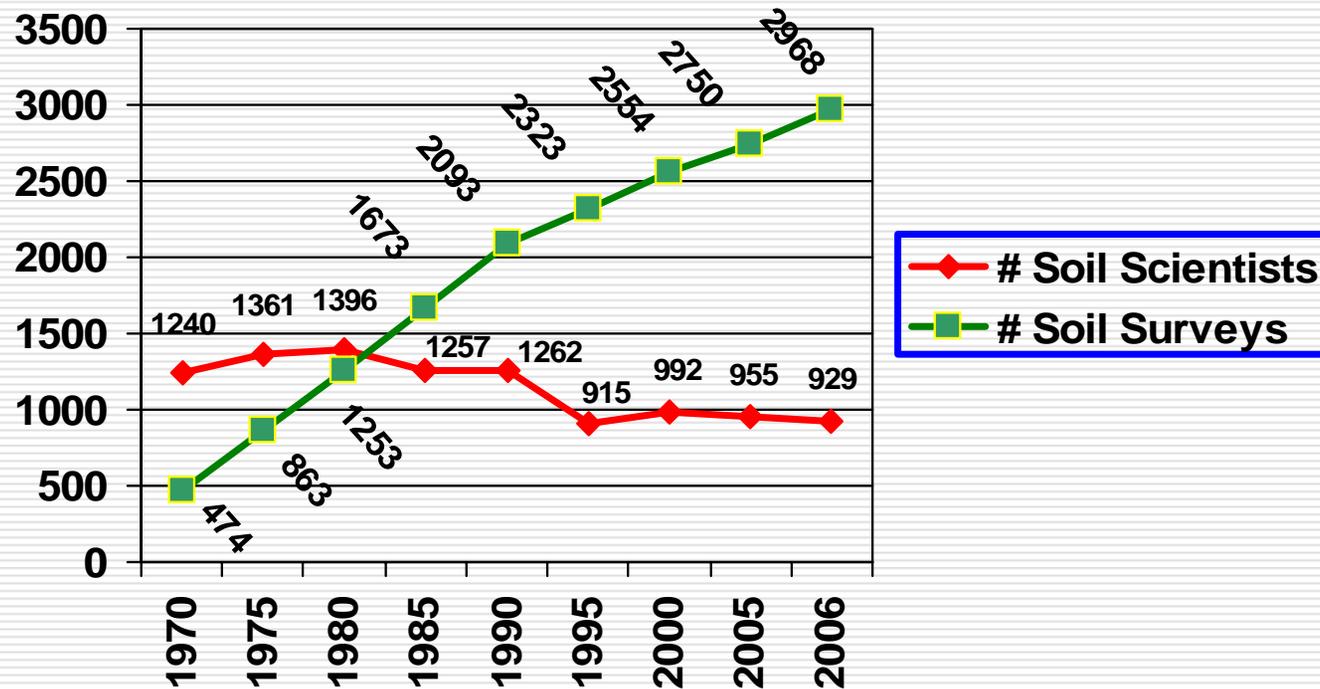
- Complete on **2,463 Survey Areas**
- **500** to go by the end of 2007

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



# Soil Scientists and Workload

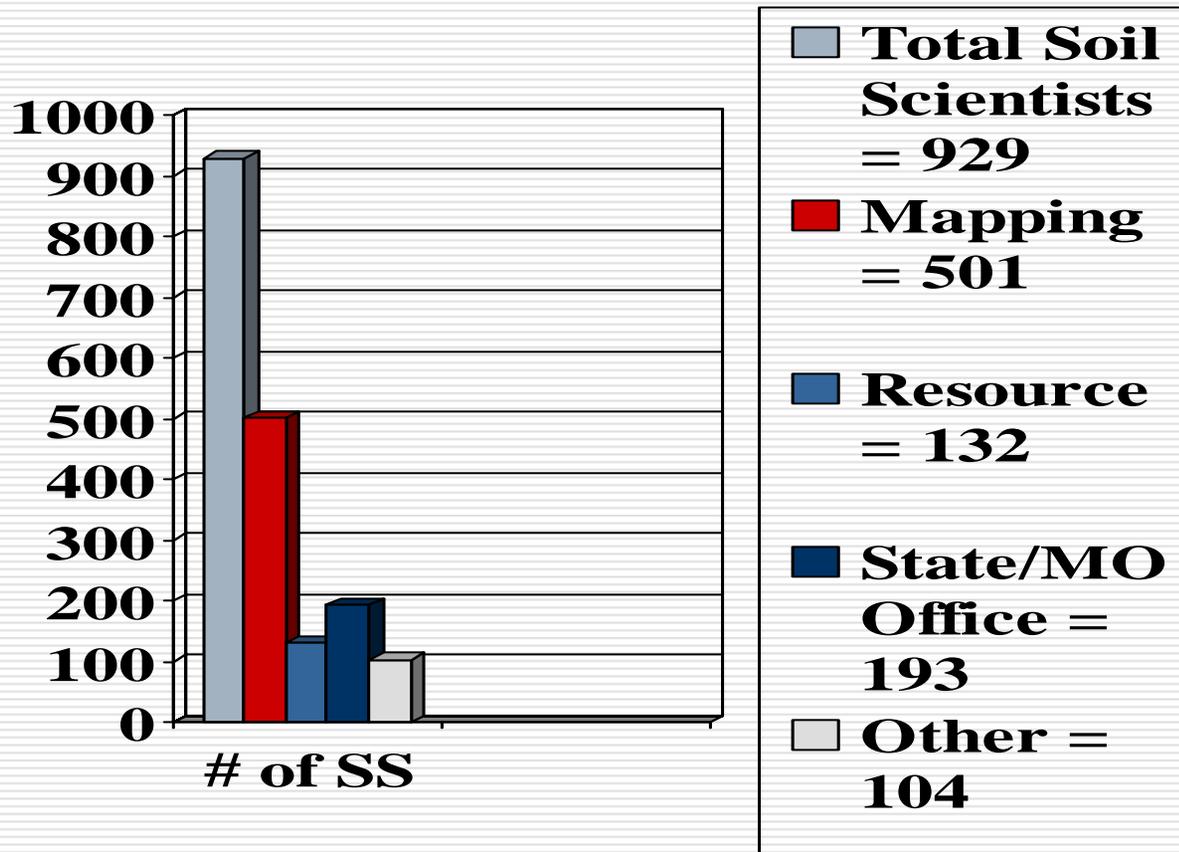
## Declining Number of Soil Scientists and Increasing Number of Soil Survey's to Maintain



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

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**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

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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 Lands Advisory Group

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- 1. Bill Ypslantis, BLM**
- 2. Pete Biggam, 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



# MLRA Soil Survey "Field" Staff

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## New MLRA Soil Survey Staff **w/out Reimbursables**

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

## Current Soil Survey Office Staff

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

# MLRA Regional Office "MO" Staff

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## Current MO Staff

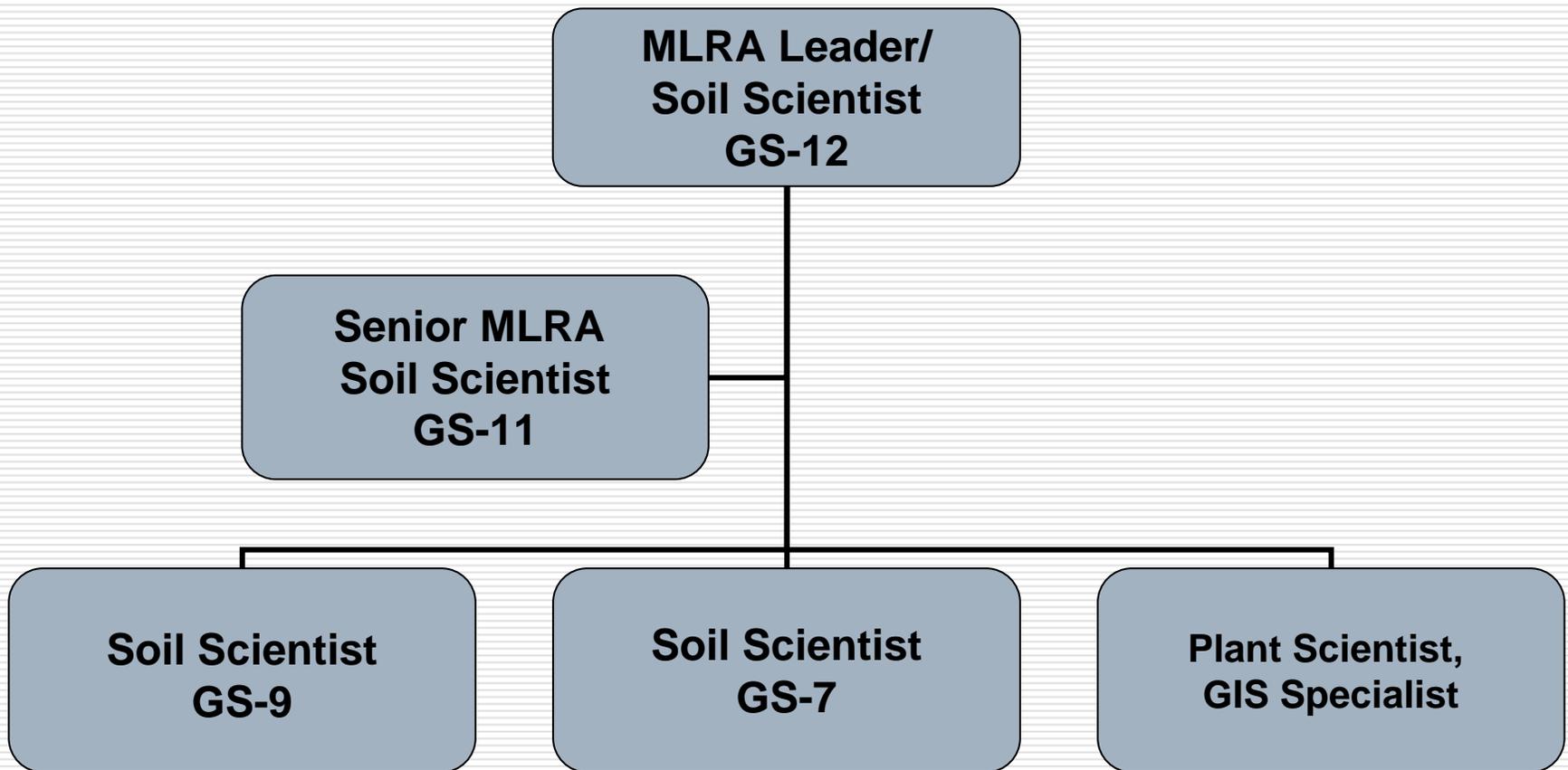
									Total
Staff per Office	4	5	6	7	8	9	10	13	126 Staff
Number of Offices	1	5	3	2	2	1	1	2	18 Offices

## New MO Staff

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

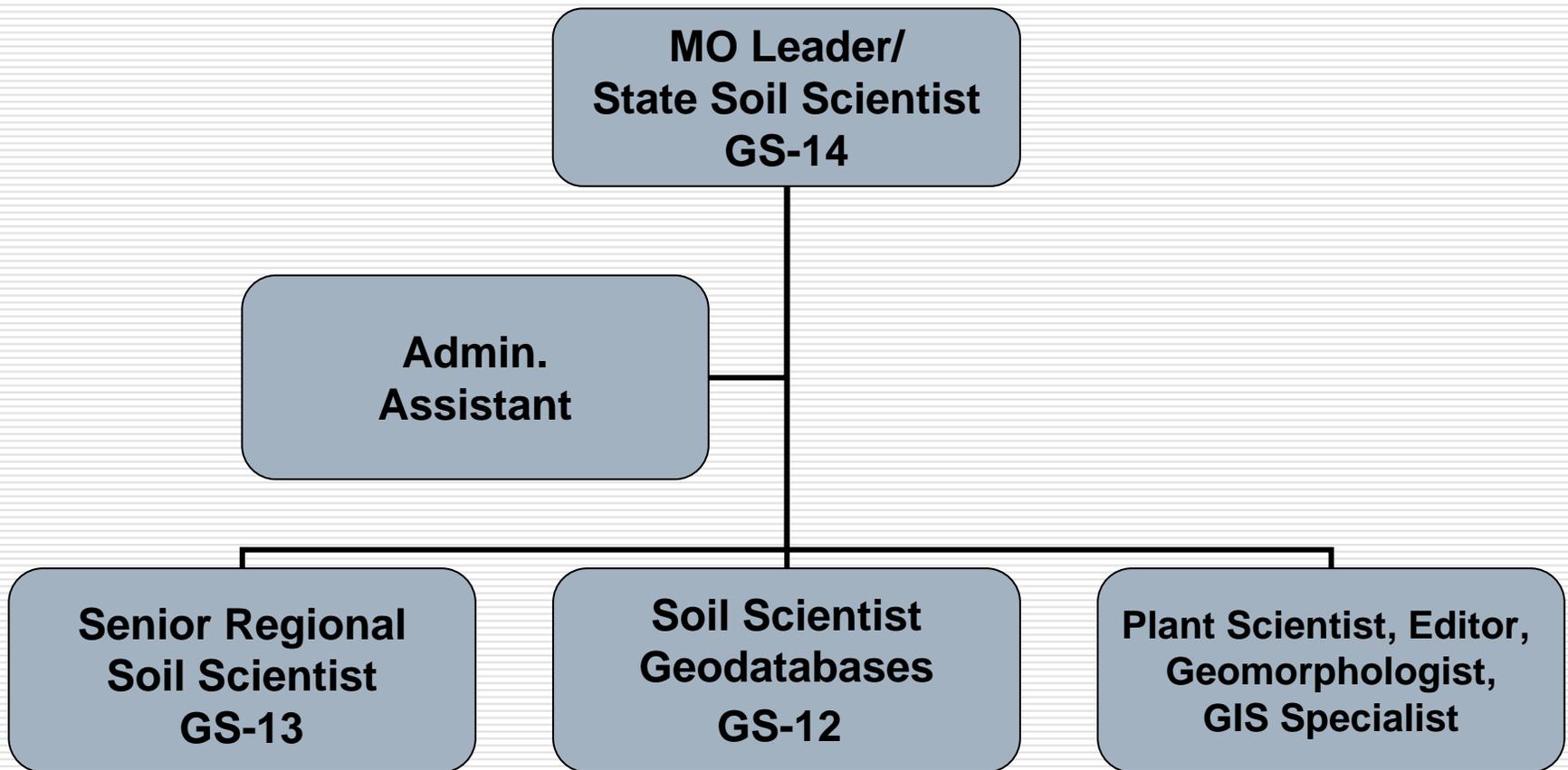
# New MLRA SSO Staffing Plan

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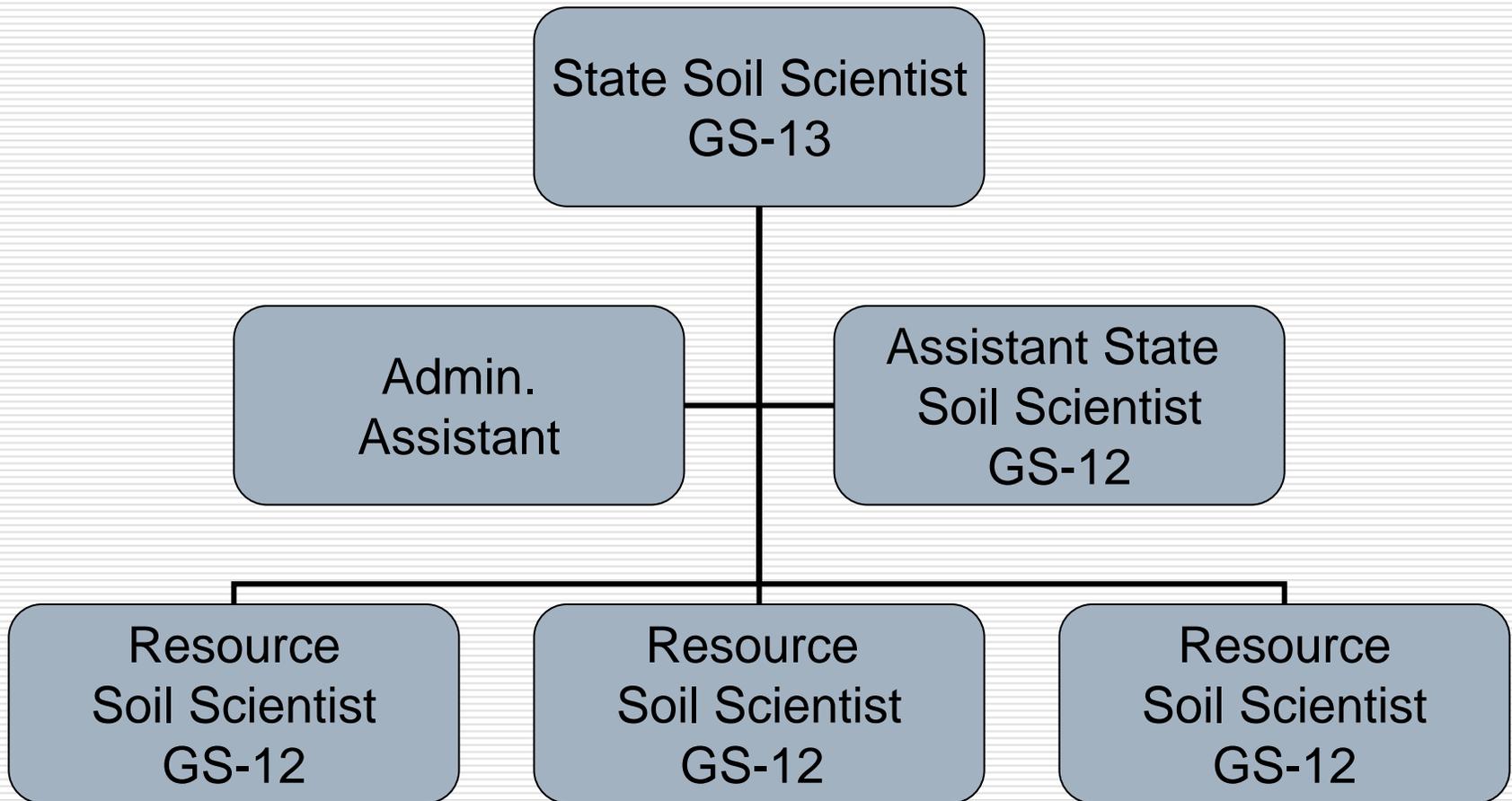
# New MLRA Regional Office Staffing Plan

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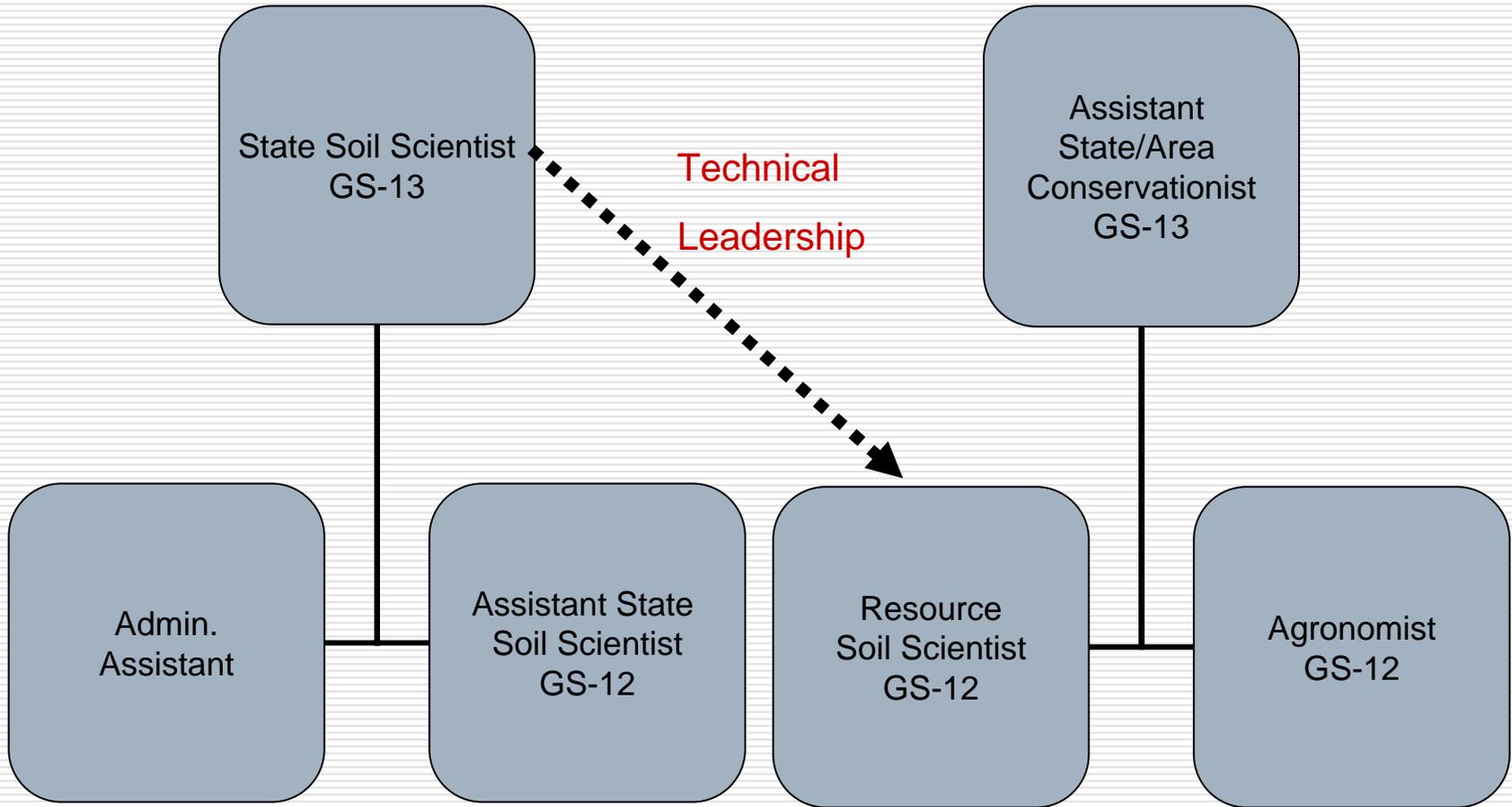
# New SO Staffing Plan

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# New SO Staffing Plan

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# New Funding Formula Factors

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## 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

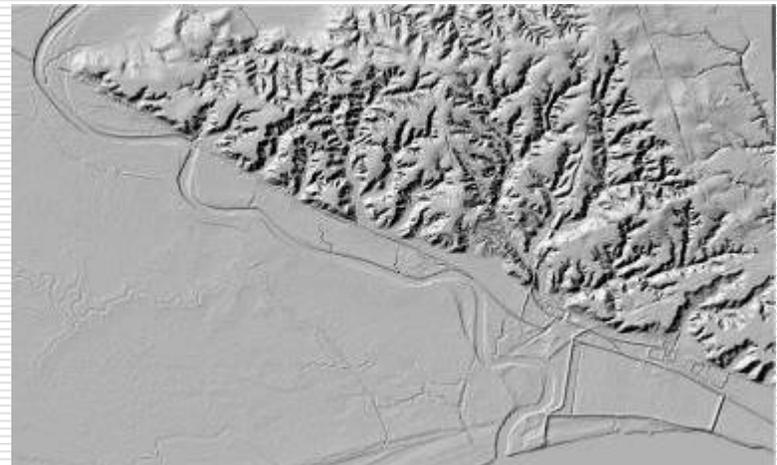
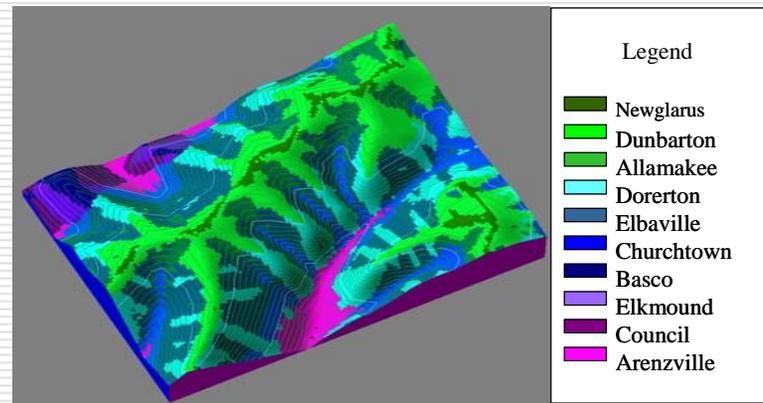
# Soil Survey Staff Functions

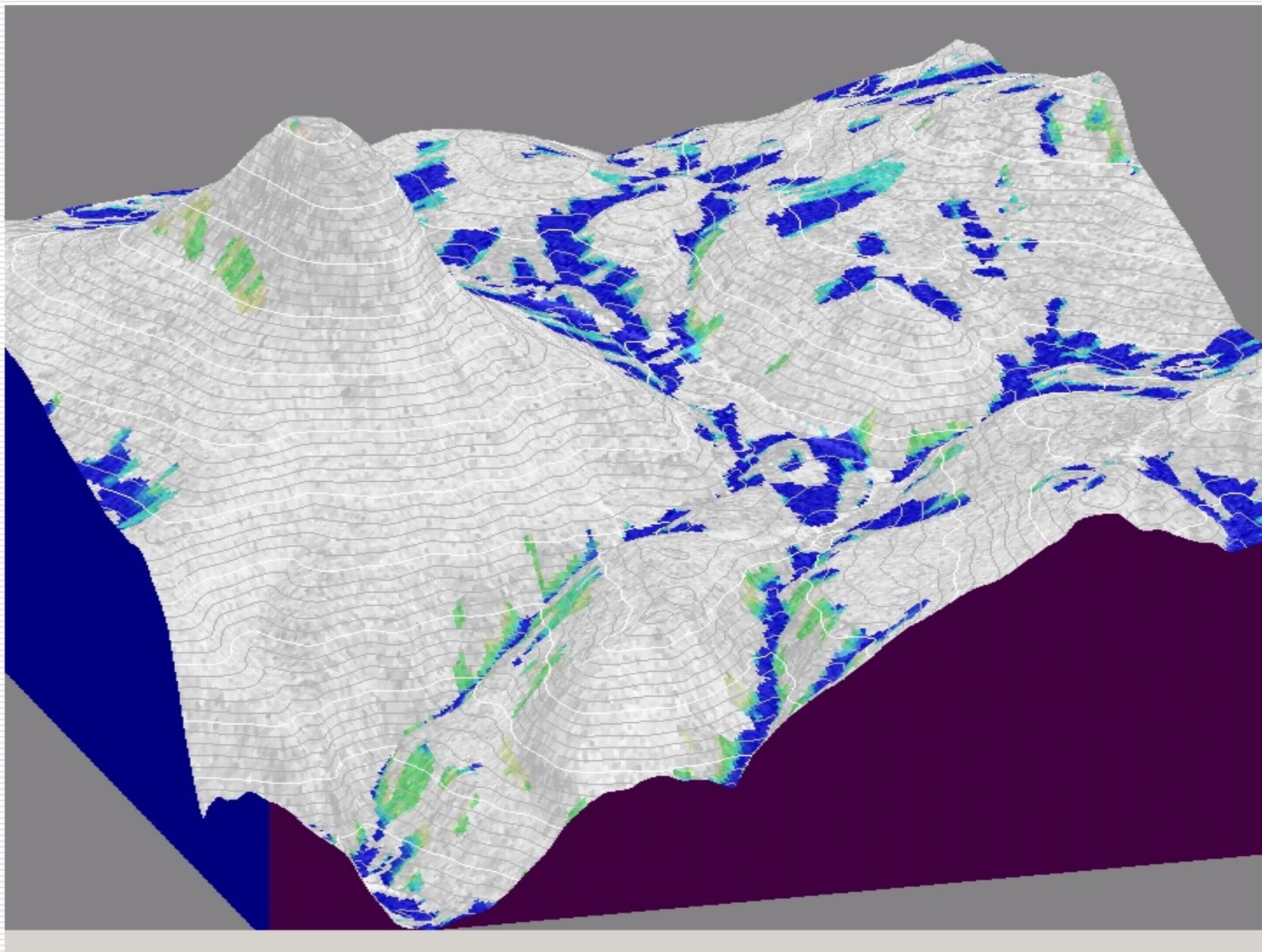
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- **MO** – Leadership in the production and quality assurance of soil survey's for assigned multi-state geographic area.
- **SO** – State-wide technical soil services to provide customer and programs support and provide production soil survey coordination.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



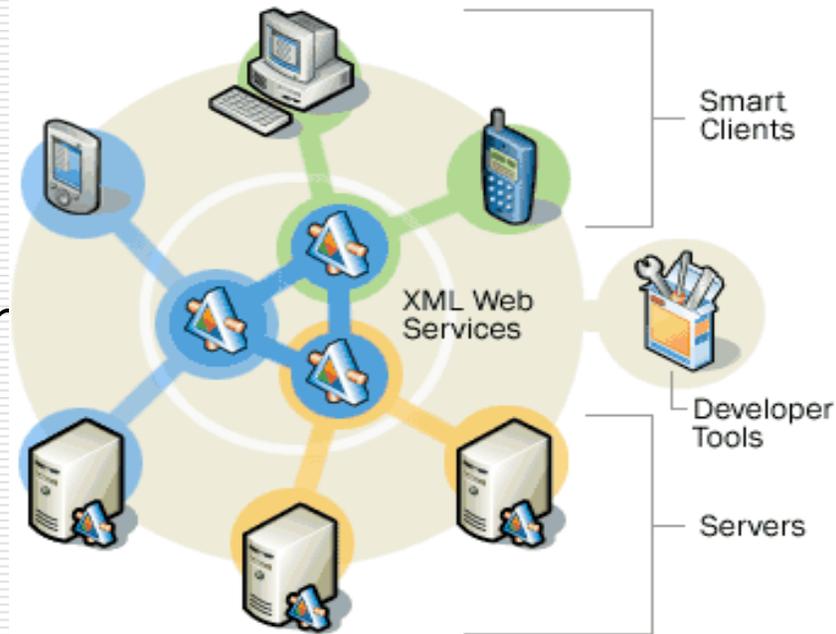


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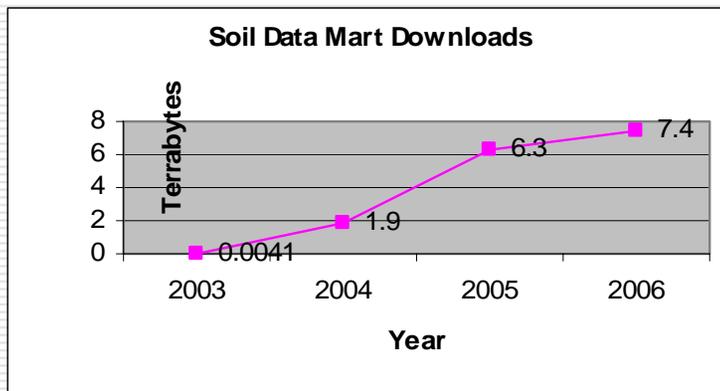
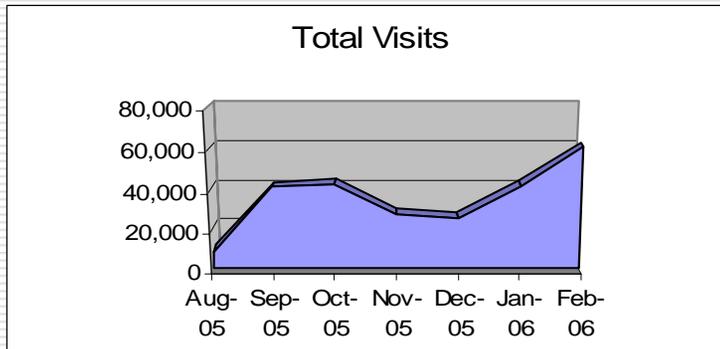
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# Enabling eGov Web Services

- NRCS on-line and self service systems
- Conservation
  - TSP's
  - FSA – CRP
  - Researchers/Modelers
  - EPA, ARS, Universities
- Commercial Enterprises
  - Crop Insurance, Manager
  - Chemical/Fertilizer
- Disaster Preparation and Recovery
  - FEMA, USDA, NGA



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



**Web Soil Survey**

United States Department of Agriculture  
Natural Resources Conservation Service

**Start WSS**

- 1 Define.**  
Area Of Interest  
On the Area Of Interest tab, you must define the area that you are interested in. To do so, zoom in on a map and draw a box around your area, or use a choice list.
- 2 View.**  
Soil Map  
Next, click on the Soil Map tab to view and print a soil map of your area.
- 3 Explore.**  
Soil Data Explorer  
The Soil Data Explorer tab provides access to all of the soil data for your area of interest. Here you can determine the suitability of the soils in your area for a particular use.

The National Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

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# NCSS Partnership

## Planning

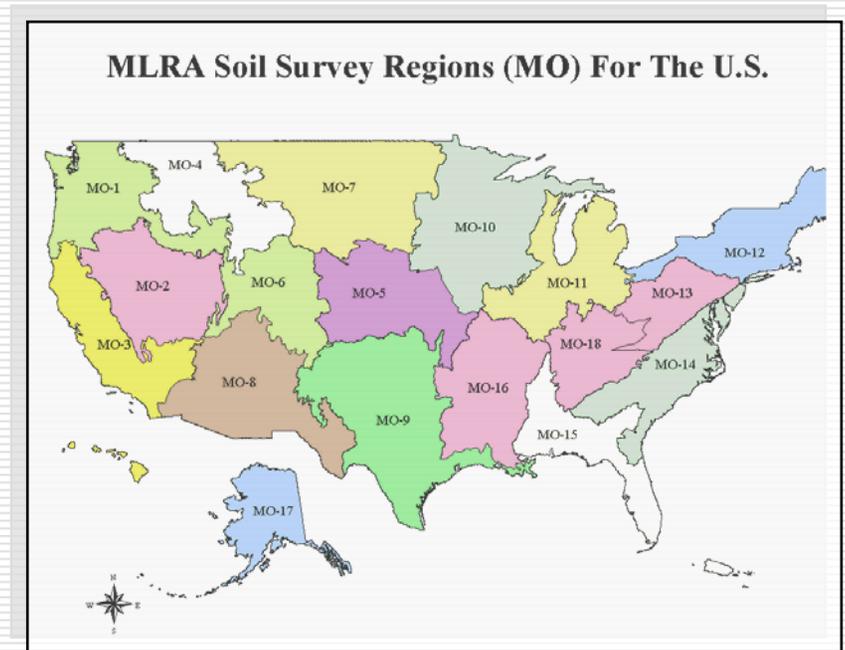
- Long Range Plans (145)
  - Identify Benchmark Landscape Catenas
  - Setting the Priorities
- Project Work Plan (1-5 Year)
  - Identify Thesis or other Work
  - Identify Lab Analysis Needs
  - Identify Documentation Needs
- Annual Business Plan
  - Work the plan

# More Efficient

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Reduce the  
number of MO  
office staff

From 126 to 84  
to reflect  
functional shift  
to field.



# Finish The Job

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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

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

# Employee Friendly

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## 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

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## **Purchase Required 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

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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 ???