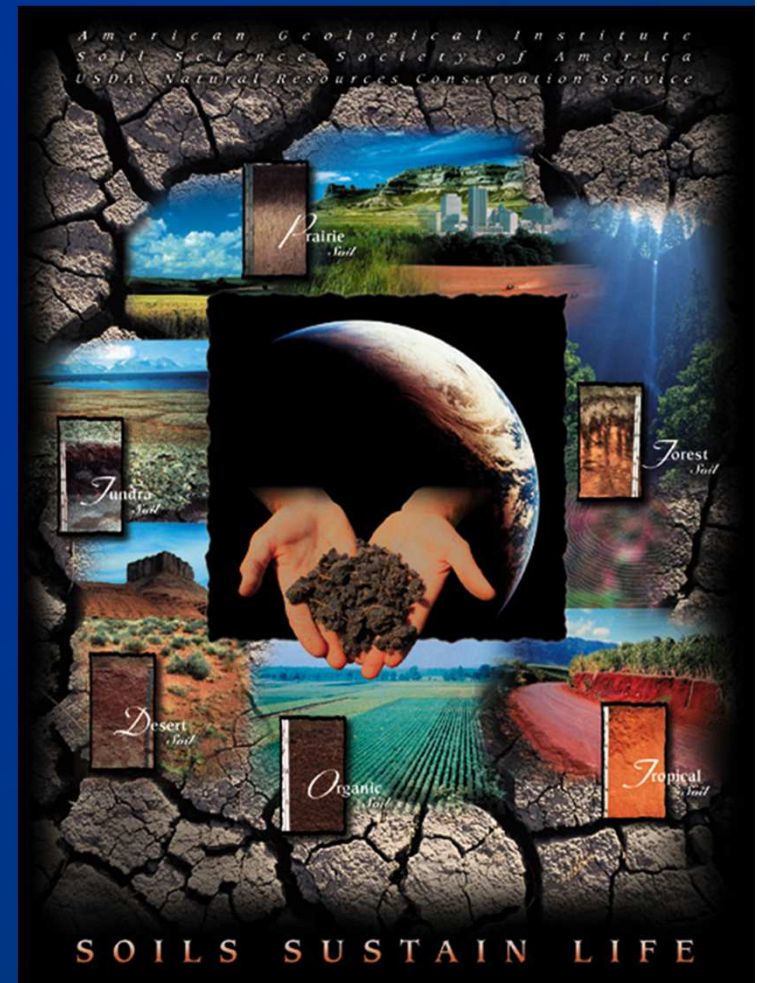




# Structure of Soil Survey and the Soil Science Division in the US

**Dr. Michael Robotham**  
**National Leader –**  
**Technical Soil Services**  
**Soil Science Division**  
**USDA-NRCS**



# Outline of Presentation

- Natural resource management in the US government
- Soil survey and soil science division
- Current management and operational structure
  - Administrative organization
  - Technical responsibilities of SSD staff
  - Technical responsibilities of State staff
- Discussion / Questions

## NRM in the US

- Multiple departments, multiple agencies
- Very general splits of responsibility (but lots of overlap)
  - Public land vs private land
  - Production vs preservation
  - Technical advice vs regulation
  - Outreach vs research
    - Collectors vs users of data
- Federal vs State vs Local





## Who is who in the USDA

- 17 agencies; 17 additional offices
- Wide range of responsibilities – forests to “food stamps” to rural development
- Agencies with NRM mission components
  - US Forest Service (USFS)
  - NIFA (formerly CSREES)
  - FSA and RMA
  - Natural Resources Conservation Service (NRCS)

# Natural Resources Conservation Service (NRCS)

- Mission statements
  - Getting conservation on the ground
  - Helping people help the land
- Primary clientele are private landowners
- Providers of technical and financial assistance – non-regulatory
- Voluntary participation by customers

# NRCS History

- Roots in the “Dust Bowl” of the 1930’s
- Soil Conservation Service (SCS) was authorized by Congress in 1935
- Focus was on reducing soil erosion to maintain productivity
- “Farm Bill” incentive programs -- 1985
- Changed name to NRCS in 1994

## NRCS Deputy Areas

- Conservation Operations (the primary focus of the agency)
  - 51 states/areas, 1000+ local offices
- Programs – they handle the Farm Bill
- Administrative folks (HR, purchasing etc.)
- Two technical divisions
  - Science and Technology
  - Soil Survey and Resource Assessment



## Why two technical groups?

- Who knows? History mostly ....
- Rough “division of labor”
- S&T focuses on direct support for conservation planning
  - Standards and specifications, models etc.
- SSRA focus on data generation/processing – “second level” support
- LOTS of overlap – less coordination ....



## Divisions of SSRA

- Resource Inventory Division (RID)
  - They do the Natural Resources Inventory
- Resource Assessment Division (RAD)
  - Modeling group – CEAP
- **Soil Science Division (SSD)**
  - **The remainder of this talk**
- International Programs Division
  - The reason I was able to come speak with you today



**NRCS**

Natural Resources Conservation Service

**NCSS**

National Cooperative Soil Survey

# Soil Survey and the Soil Science Division

# Long History (over 120 years)

- 1894/1899 Divisions of Soils / Soils Bureau in USDA – Dr. Milton Whitney
- 1913-1935 Soils Bureau (USDA) – Dr. Curtis Marbut
- 1931/1933 – Soil Erosion Service / Soil Conservation Service – Dr. Hugh Hammond Bennett
- 1935-1967 Dr. Charles Kellogg leads Soil Bureau and Soil Survey Division
- 1952 – Soils Bureau to SCS / NRCS

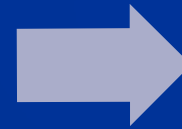


## Evolution of SSD

Soils Bureau  
scientific soil  
surveys  
(Marbut)



SES/SCS soil  
conservation  
surveys  
(Bennett)



SCS  
(NRCS) soil  
science  
program  
(Kellogg)

# Core Mission of the Soil Science (formerly Survey) Division

- **make an inventory of the soil resources of the United States**
- **keep the soil survey relevant to ever-changing needs**
- **interpret the information and make it available in a useful form**
- **promote the soil survey and provide technical assistance in its use for a wide range of community planning and resource development issues related to non-farm and farm uses**

## Organized as the “National Cooperative Soil Survey” (NCSS) Program

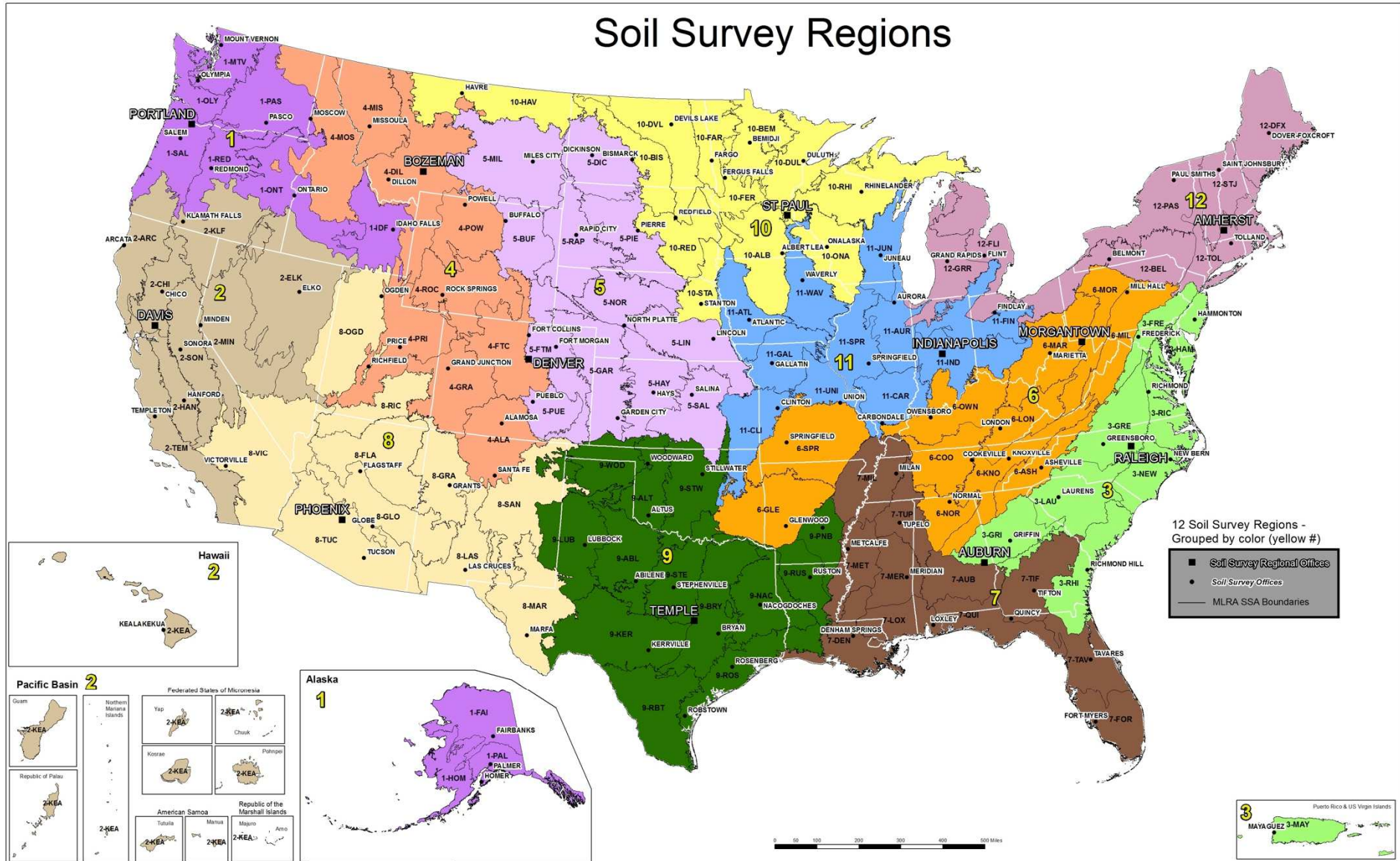
- Federal Agencies
- State Agencies
- Universities-250+
- Local Governments
- NGOs
- Private Sector
- International Partners



## Structure of Soil Science Division

- Total SSD staff nationwide 500-550
- 12 Regional Offices ~ 60
- 121 SSO Offices ~400
- National Soil Survey Center ~65
- National Headquarters~10
- Technical Soil Science Staff ~175
  - Employed by NRCS but do not report to SSD

## Soil Survey Regions





## SSD Program Areas

- International Activities (Thomas Reinsch)
- Operations (Roy Vick)
- Soil Business Systems (Dave Hoover)
- Soil Interpretations (Maxine Levin)
- Technical Soil Services (Michael Robotham)
- Soil Quality and Ecosystems (vacant)
- Survey Research and Lab (Doug Wysocki)
- Soil Survey Standards (Curtis Monger)





Natural Resources Conservation Service

NCSS

National Cooperative Soil Survey

## National Soil Survey Center Mission Statement

Through the National Cooperative Soil Survey, provide leadership to pragmatically produce, utilize and apply soil and natural resource information to better conserve, maintain and improve the nation's natural resources

AKA: Provide scientific and technical support to the NCSS

## More about NSSC

- Located in Lincoln, Nebraska
- Director – Jon Hempel
- Approximately 80 staff
- Charles H Kellogg Soil Survey Laboratory (KSSL)
  - One of the biggest and best soils analytical laboratories in the world
- All national leaders and staff there except international and operations (both in DC)

## Core Mission of the SSD

1. **make an inventory of the soil resources of the United States**
2. **keep the soil survey relevant to ever-changing needs**
3. **interpret the information and make it available in a useful form**
4. **promote the soil survey and provide technical assistance in its use for a wide range of community planning and resource development issues related to non-farm and farm uses**



# Role of the SSR and MLRA Staff

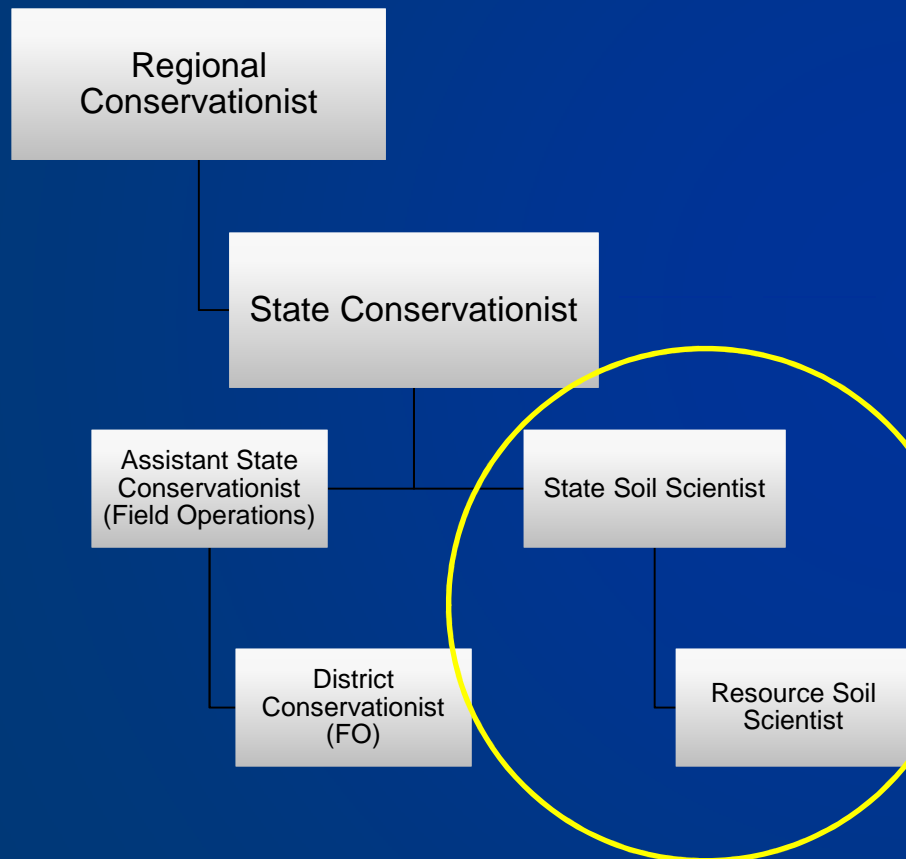
- Complete the inventory (#1)
  - Standard techniques
  - Digital soil mapping
- Keep it current (#2)
  - Soil Data Join Re-correlation (SDJR)
  - Raster data products – gSSURGO and beyond
  - Ecological Site Descriptions
  - Dynamic Soil Properties
- Assist with priorities #3 and #4

## Core Mission of the SSD

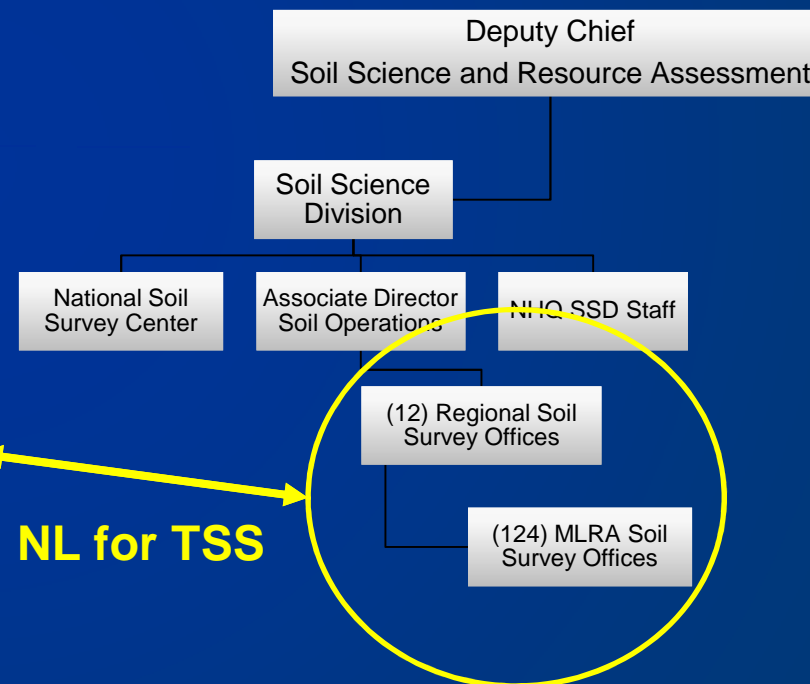
- make an inventory of the soil resources of the United States
- keep the soil survey relevant to ever-changing needs
- **interpret the information and make it available in a useful form**
- **promote the soil survey and provide technical assistance in its use for a wide range of community planning and resource development issues related to non-farm and farm uses (Technical Soil Services)**

# COMPLICATION: SOIL SCIENTISTS NOW IN TWO DIFFERENT DIVISIONS

## State Level Operations



## Soil Science Division



NL for TSS



# Role of the State Soil Scientist

- Emphasis on technical soil services (#3 and #4)
  - Support for Conservation Planning
- Increase public awareness and outreach
- Build a strong cooperative soils program (partner organizations – university, government, NGO, private)
- Advocate for Soil Survey information use in non-traditional areas

## Role of the National Staff

- Provide oversight and guidance for #1 and #2 – ‘make and enforce the rules’
  - Policy documents, handbooks, training, etc.
- Provide technical and organizational support for #3 (interpretations and dissemination of information)
- Provide overall coordination and support for #4 (TSS)
  - “Best practices”, public outreach materials

## Formal SSD-SSS Connections

- State soil scientist is member of soil survey region management team
  - ID and prioritize regional issues/projects
- Resource soil scientists are members of local office management teams
  - ID and prioritize local issues/projects
- NL for TSS as official liaison between SSSs and national SSD leadership



# Informal Connections

- Regular communication is essential
  - Face-to-face, phone, email
- Everyone has the same information and views are heard/understood
- More than just attendance at annual or semi-annual formal meetings
- Continues to be an issue – we are working on how to improve

# SSD Moving Forward

- Long history – lots of experience and expertise
- Large amount of data and information
- Existing distribution mechanisms

BUT

- Shrinking resources (money / personnel)
- New customers / new questions / new needs

# **BIG CHALLENGES and MAJOR OPPORTUNITIES**

Soils data and information is only truly valuable if it is scientifically sound, readily available and being used to inform land management



A landscape photograph of a tropical coastline. In the foreground, a sandy beach meets the turquoise ocean. The middle ground is dominated by lush, green, forested mountains. A vibrant rainbow arches across the sky, starting from the left side of the frame and extending towards the right. The sky is a mix of light and dark tones, suggesting a recent rain shower. The overall scene is serene and beautiful.

# Questions and Discussion

USDA is an equal opportunity provider and employer