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NPS Soil Resources Inventory Update

Susan Southard, NRCS-NPS Liaison, NRCS Davis, CA



Big Bend National Park

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- Soil mapping is part of the DOI Natural Resource Challenge – it's a one time deal
- Funding ~\$2.5 - 3.0 Million/year for new mapping.
- 32 park projects in 10 states

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National Level

Acres to be mapped	84.5 Million
Parks to be mapped	270
Acres mapped thru FY07	24.5 Million (29%)
Parks mapped thru FY07	140 (52%)
Alaska Acres	54 Million (64%)
Alaska Parks	16 (6%)



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NCSS South Region Status

Parks to be mapped 62 (23% of total)

**Acres to be mapped
of total) 5.2 million (6%**

Parks completed thru FY07 47 (76%)

**Acres mapped thru FY07
(18%) 945,006**

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Current Interagency Agreements with NRCS in South Region

4 States (TX, TN-NC, TN-KY)

4 Parks

- **Big Bend National Park, TX**
- **Guadalupe Mountains National Park, TX**
- **Great Smoky Mountains National Park, TN and NC**
- **Big South Fork National Recreation Area, TN-KY**

1.5 million acres

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Florida

Has largest amount of Parks/Acres not mapped in South

4 Park Units

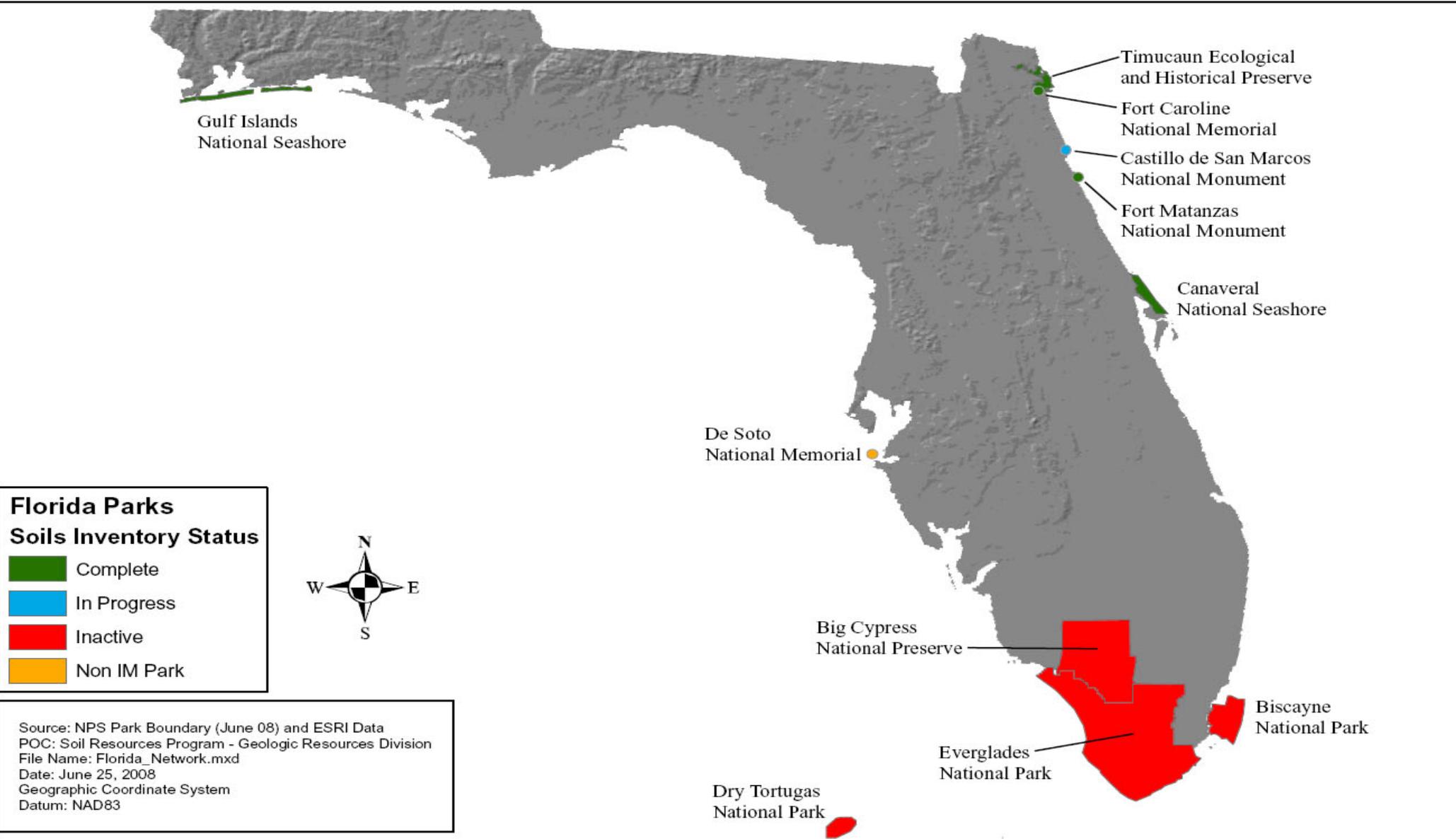
- Big Cypress National Preserve
- Biscayne National Park
- Dry Tortugas National Park
- Everglades National Park

2.47 Million Acres

Discussions underway to initiate mapping pending available funding from NPS in FY10

I&M Soil Resources Inventory Florida I&M Park Status

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U.S. Department of the Interior



Fort Jefferson, Dry Tortugas National Park



Only 8 acres of land in a 64,701 acre Park

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Future Activities in South Region

Working with Kentucky and MO 18

Mammoth Cave National Park and Cumberland Gap National Historic Site as a new non-MLRA Soil Survey Areas to meet NPS needs

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Immediate Liaison Tasks

Analysis of 43 multi-state/multi-county parks for SRI staff (same symbols w/ different data etc) clipped from numerous SSURGO datasets

Overlap lists for all 43 parks (SC, GA, VA)

NPS SSURGO template with custom reports and “hidden” ACCESS interp queries

NPS “group” in NASIS (NSSC) with reports, queries, rules

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Scoping sessions, field weeks, status reports (BLUE, GARI, NERI, BADL, BIBE, LAVO)

-Regional and National meetings (WV, KY, RI, FL) to get the word out

-Soils training for NPS staff

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NPS Soil Resource Inventory Staff

Pete Biggam - Soils Program Manager

Judy Daniels - Data Manager

Branon Barrett – GIS Specialist

Troy Kashon – GIS Specialist

Sue Southard – NRCS/NPS Liaison

Part of liaison's role is to help parks understand soils....



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Our Goal.....



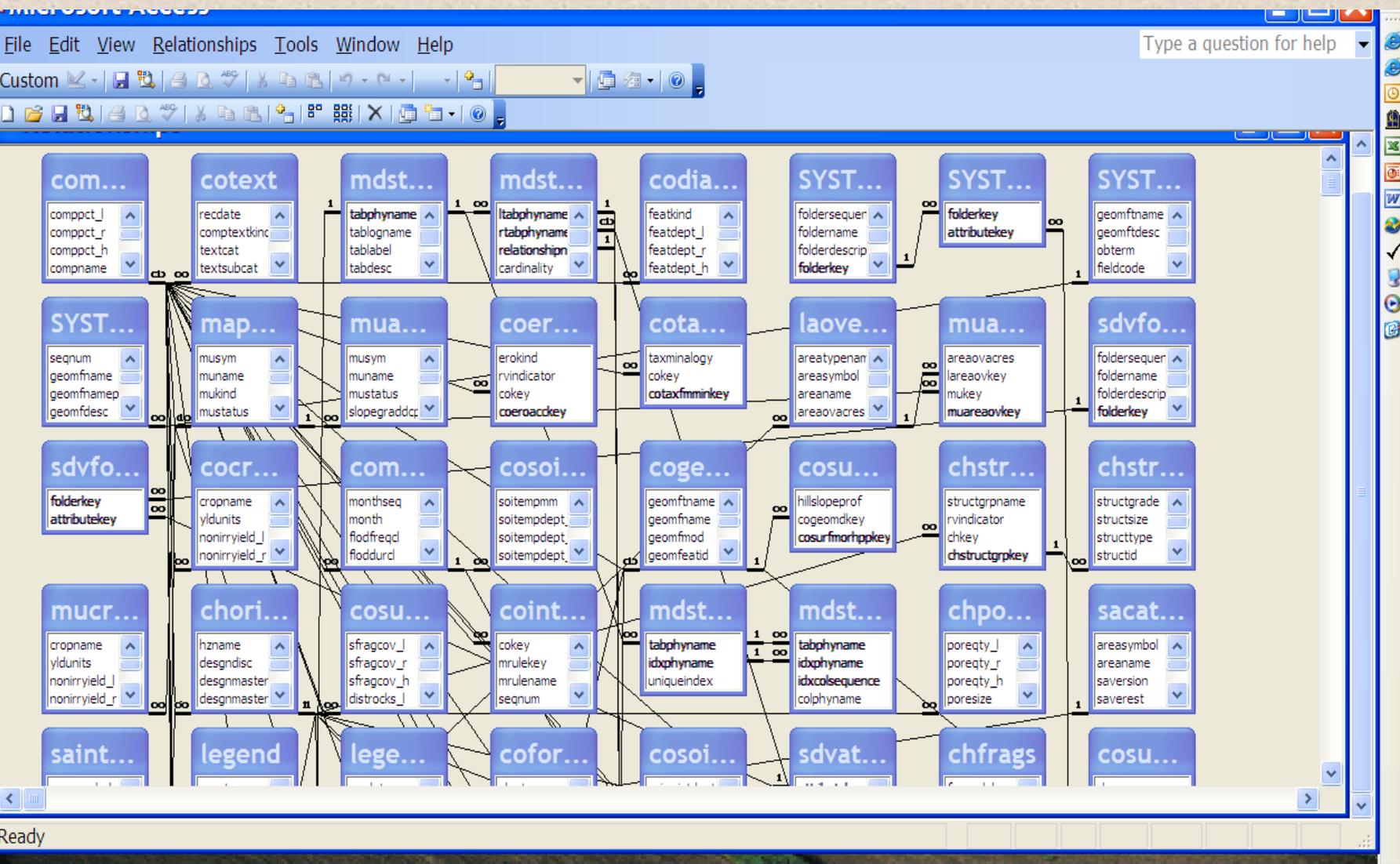
Promoting the use of soils information in NPS decision making and making it accessible in a user friendly way to staff and partners.

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The SRI is currently developing an ArcGIS Desktop toolset that will geospatially link soils data allowing users to access soils data in an interactive manner. The current focus is on the map unit descriptions, pedon point data, and ecological site descriptions. The current toolset includes a MapUnit Identify Tool and a Pedon Identify Tool.



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The MapUnit Identify Tool can be used on any I&M park that has been completed by the SRI. To use the tool the user simply selects a soils layer in the ArcMap table of contents, clicks a polygon of that layer, and an associated help file containing that map unit's description is opened.

The image displays two windows from the ArcMap software. The left window shows a topographic map of Pinnacles National Park with a yellow polygon highlighting a specific area. The right window is a detailed view of a map unit description for '105-Chalone-Firststister-Highpeaks - complex, 50 to 70 percent slopes' within Pinnacles National Monument. The description includes the following sections:

- Setting**
 - Elevation: 968 to 3360 feet
 - Mean annual precipitation: 17 to 19 inches
 - Mean annual air temperature: 55 to 61 degrees F
 - First-frost period: 190 to 210 days
- Composition**
 - Chalone and similar soils: 35 percent
 - Firststister and similar soils: 35 percent
 - Highpeaks and similar soils: 28 percent
 - Dissimilar minor components: 10 percent
- Description of Chalone soils**
 - Setting**
 - Landform: Back slopes hills
 - Landform position (two-dimensional): Backslope
 - Landform position (three-dimensional): Side slope
 - Down-slope shape: Convex
 - Across-slope shape: Linear
 - Aspect - representative: North
 - Aspect - range: Northwest to northeast (oblique)
 - Slope range: 50 to 70 percent
 - Parent material: Residual weathered lava tuffite
 - Drainage class: Well drained
 - Properties and Qualities**
 - Depth to restrictive feature: 28 to 39 inches to lithic bedrock
 - Soilwater capacity (to transient water (root): Moderately high
 - Flooding frequency: None
 - Ponding frequency: None
 - Depth to water table: More than 72 inches
 - Salinity maximum: Not saline
 - Sodicity maximum: Not sodic
 - Calcium carbonate equivalent (percent, to saturation): Available water capacity (arbitrary profile) Very low (about 1.8 inches)
 - Interpretive Groups**
 - Land capability subclass (rearranged): Tc
 - Land capability subclass (original): Tc
 - Ecological site: Upper, north-facing slopes 17-19' p.z. (R1501810A)
 - Typical Profile**
 - A1-0 to 1 inches, very gravely loamy coarse sand
 - A2-3 to 8 inches, very gravely coarse sandy loam
 - Bu-8 to 20 inches, very gravely coarse sandy loam
 - R-20 to 33 inches, bedrock

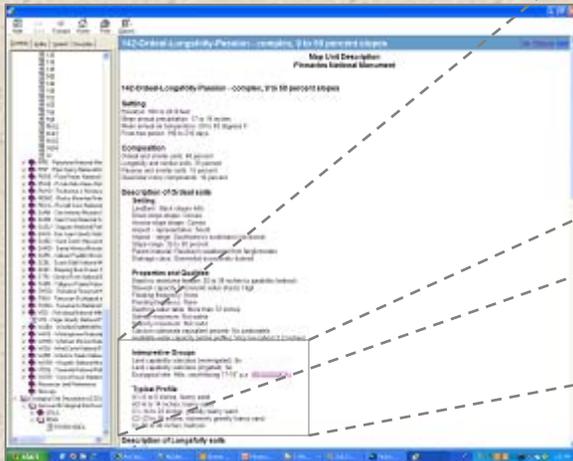
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From the map unit description, ecological site descriptions can be accessed via a hyperlink in the help file if there is a NRCS approved ESD Report for that map unit.



Interpretive Groups

Land capability subclass (nonirrigated): 6e

Land capability subclass (irrigated): 6e

Ecological site: Hills, south-facing 17-19" p.z. [\(R015X1100CA\)](#)

Typical Profile

A1-0 to 6 inches; loamy sand

A2-6 to 14 inches; loamy sand

C1-14 to 23 inches; gravelly loamy sand

C2-23 to 36 inches; extremely gravelly loamy sand

Cr-36 to 40 inches; bedrock

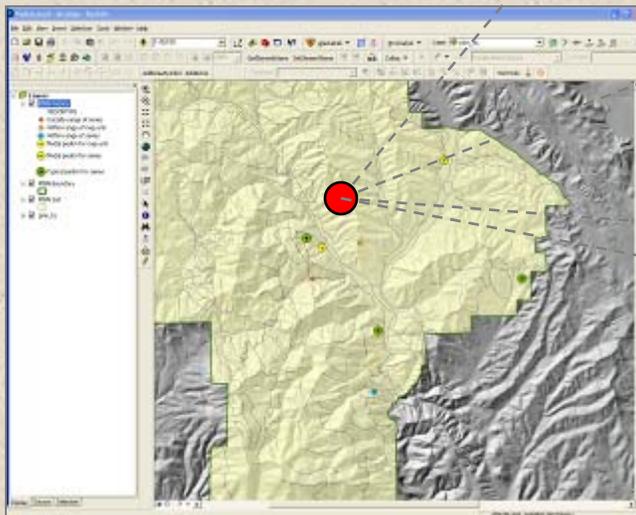
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The Pedon Identify Tool is currently in the early development stages. The concept is similar to the MapUnit Identify Tool in that a help file will be called when the user makes a selection by clicking a point in a selected layer. This will allow for more site specific information to be accessed by the user.



Soil Pedon Description

Hide Back Forward Home Print Options

Contents Search Favorites

- Pedon Descriptions
 - Error: There is no Pedon
 - PINN - Pinnacles Nation
 - PINN001
 - PINN015
 - PINN018
 - PINN023
 - PINN026
 - PINN074
 - PINN109
 - PINN252
 - PINN254
 - S05CA069010

PINN015

Soil Pedon Description Pinnacles National Monument, California

Soil Name as Correlated:
Passion

Soil Classification:
Sandy-skeletal, mixed, thermic, shallow Typic Xerorthents

Soil Name as Originally Described and/or Sampled:
Passion

Report Print Date:
02/08/2008

Description Date:
01/19/2005

Describer(s):
Ken Oster and Valerie Bullard

User Site ID:
PINN015

User Pedon ID:
PINN015

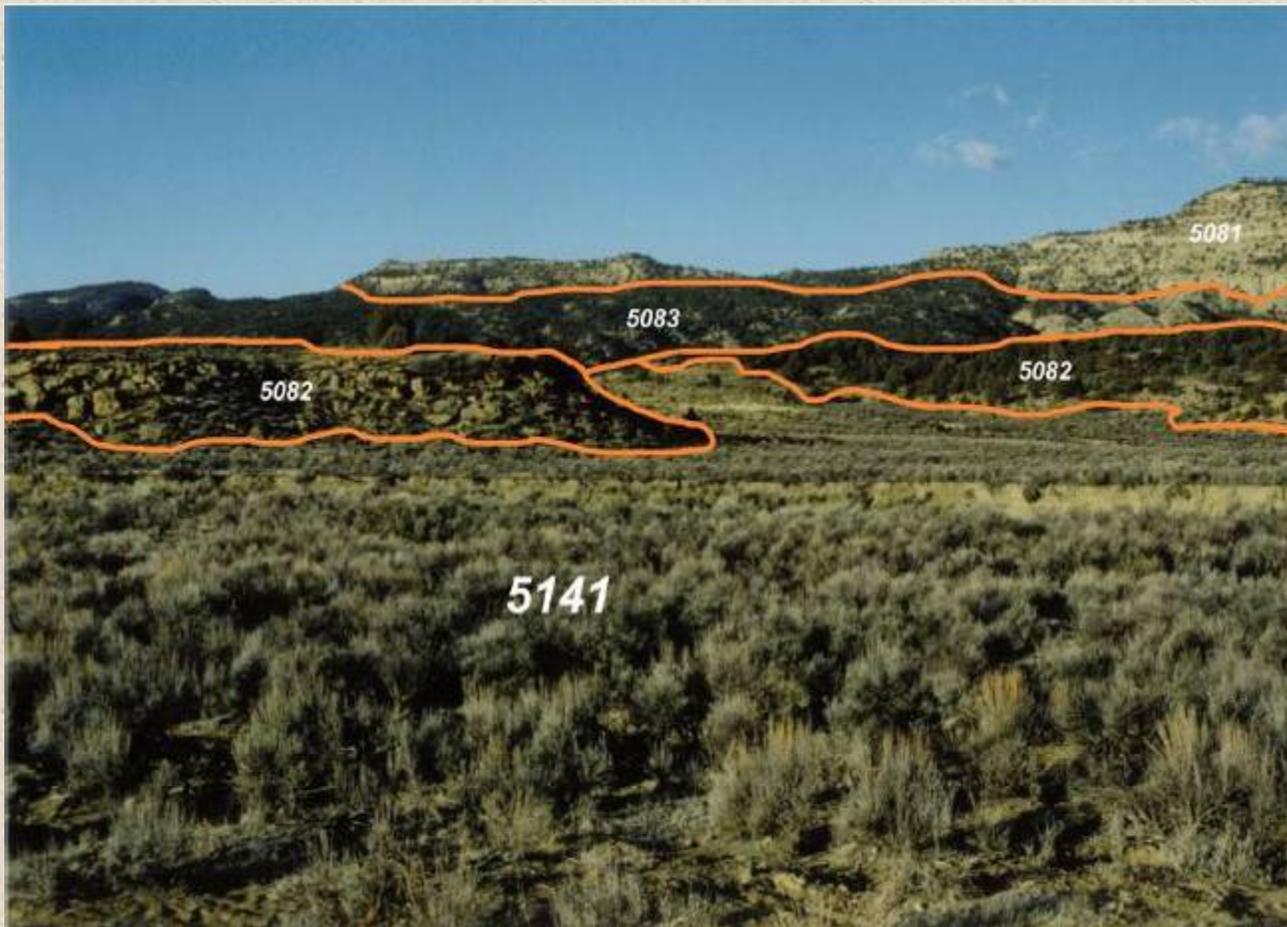
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Photo Documenting Map Units



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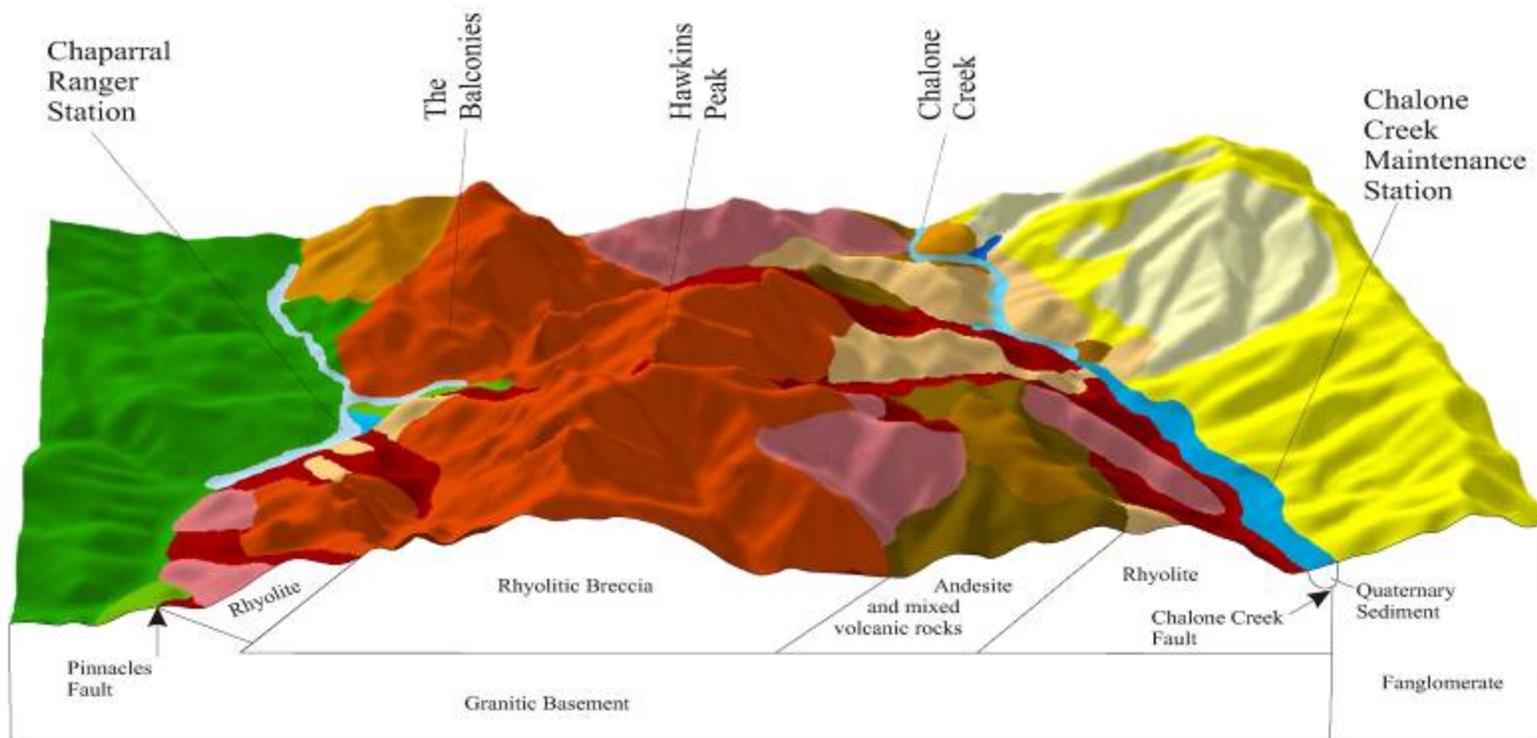
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Use of Geospatial Tools and Map Units

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Block Diagram Relating Soils, Landforms, and Geology



Conceptual representation of geology. Vertical exaggeration 1.5:1.

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What's Cool About Our Park Soils?

Series Type Locations – accurately populated in NASIS pedon

Special properties – tephra layers, horizons from historic floods, rare plants

Endemic Soils - Unique to park – mapped nowhere else ...a park story to tell !

Benchmarks – what an opportunity to preserve a site!

Soil Monoliths – for visitor center display



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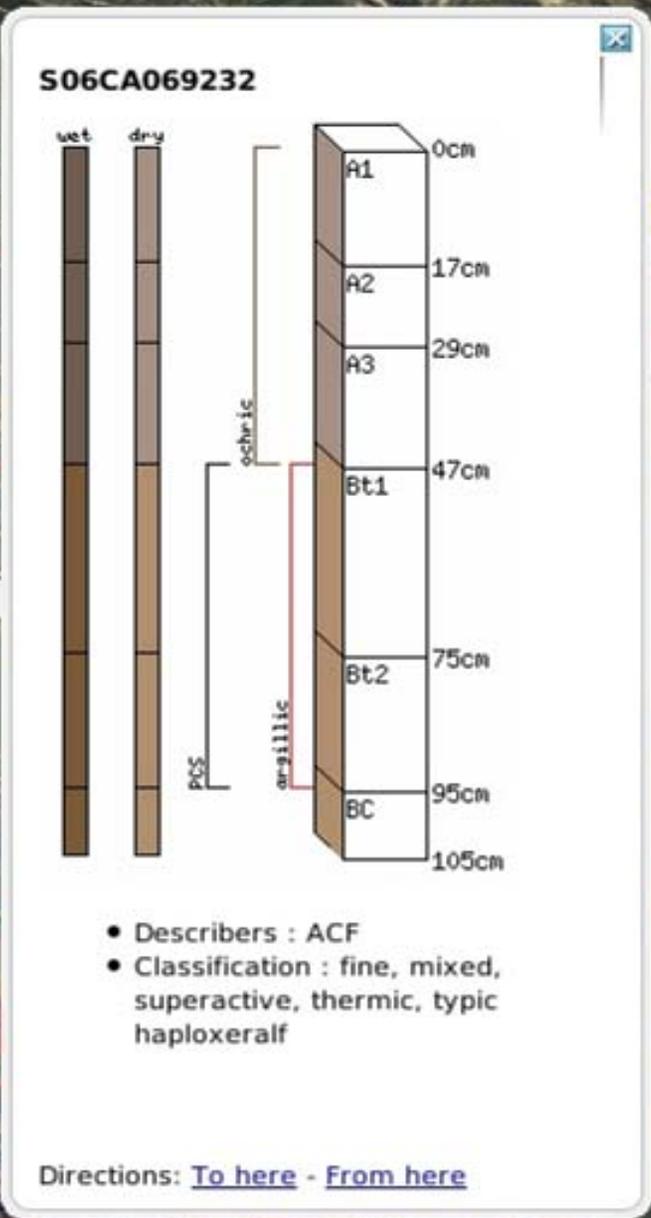
Soil Monoliths



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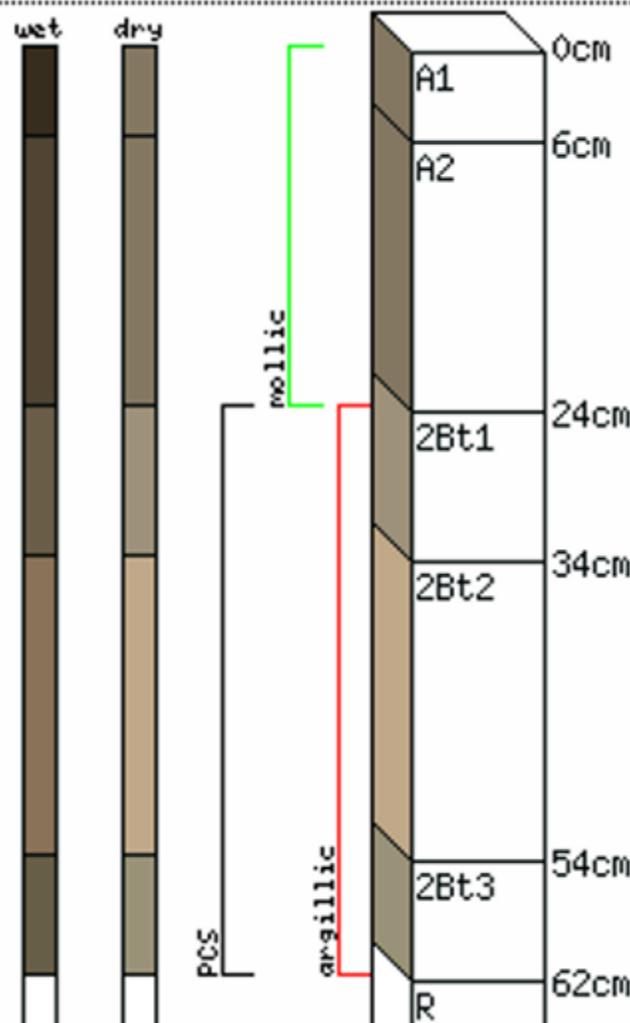


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[S04CA069002K Hzn Data](#) [2004-10-20] [KO]
fine, smectitic, superactive, hyperthermic, typic argixeroll

