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Update on The National Park Service Soil Survey Activities

**Pete Biggam
Soils Program Manager
Denver, Colorado**

National Park Service



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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	

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NCSS West Region Status

Parks to be mapped	134 (50% of total)
Acres to be mapped	76.5 million (90% of total)
Alaska Acres to be mapped	48 Million (63%)
Alaska Parks to be mapped	15 (4%)
<hr/>	
Parks completed thru FY07	51 (38%)
Acres mapped thru FY07	13.7 million (18%)

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NPS Alaska Strategy

Alaskan Parks 16 (6%)
Alaskan Acres 54 Million (64%)

**Denali National Park Complete
(6 Million Acres)**

15 Parks and 48 Million acres remain

**Current Plan prioritizes Parks, will use
multiple mapping scales and multiple
levels of mapping orders to meet the
needs of the parks**

**Have initiated mapping at Yukon-
Charley Rivers National Preserve in
FY08 – 2.5 million acres**

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- **Current Interagency Agreements with NRCS in Western Region addresses;**
- **7 states**
- **36 parks**
- **15 million acres**
- **\$2.25 million annually**

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Alaska

Yukon – Charley Rivers National Preserve
2.5 Million Acres

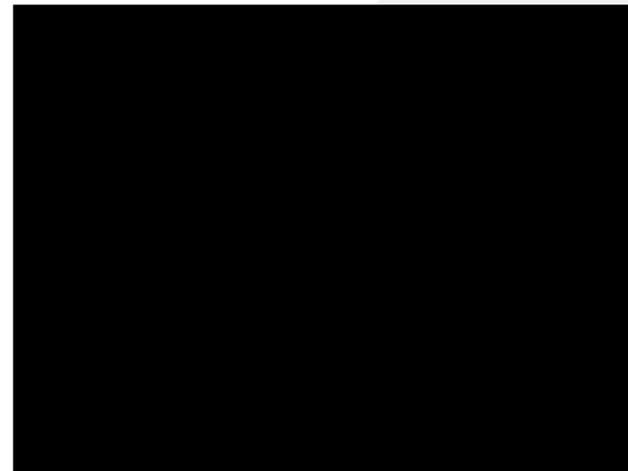
Estimated Completion FY12

Deployed Soil Survey Crew in Fairbanks

Soil Survey Project Leader

Soil Scientist

2 Plant Ecologists



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Arizona

Glen Canyon National Recreation Area (UT689)

1.25 Million Acres

Estimated Completion FY 11

Dedicated Soil Survey Crew in Page, AZ

Soil Survey Project Leader

Soil Scientist

Range Ecologist

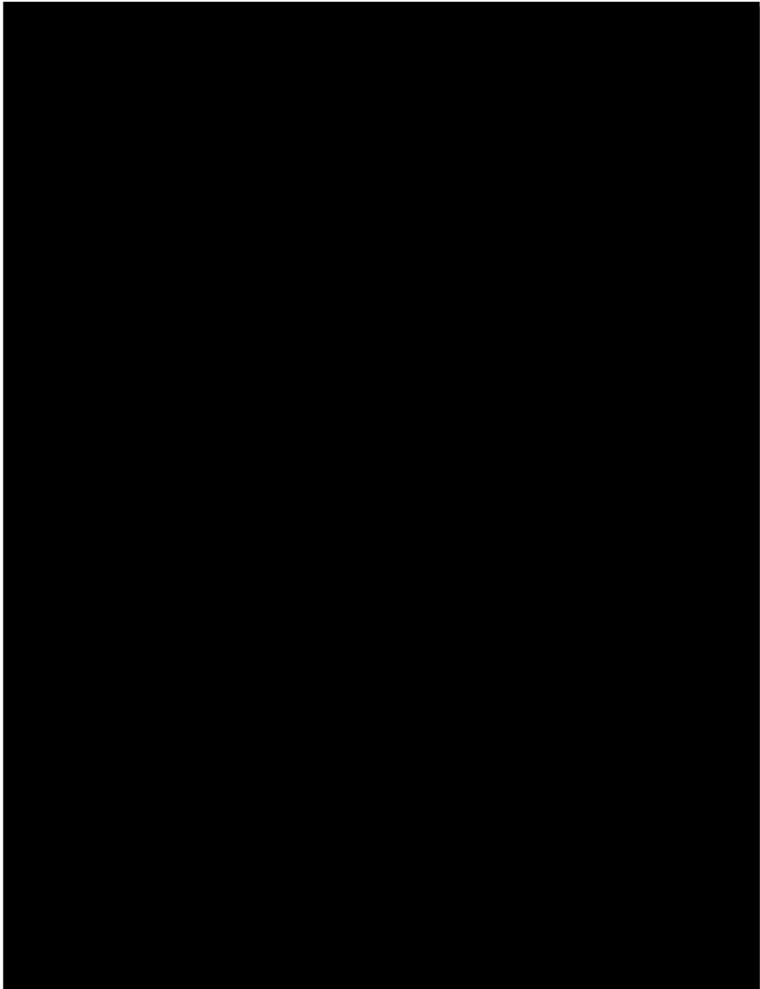
**Will also map Petrified Forest NP, and
other NPS units in Northern Arizona**

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Arizona



**Completed Canyon de Chelly
National Monument in FY07**

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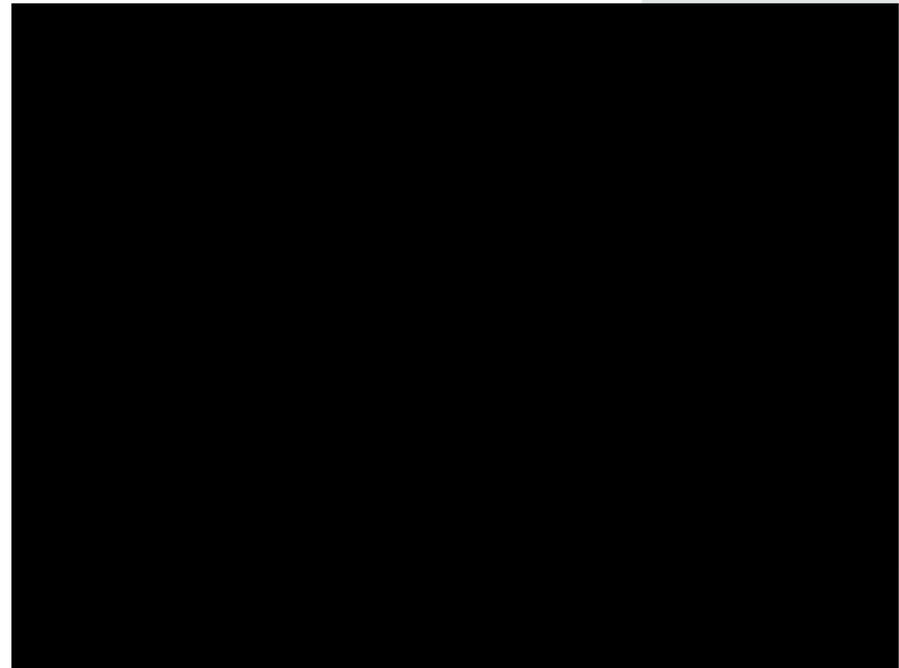
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California

Lassen Volcanic National Park (CA789)

108,000 Acres

Estimated Completion FY 09



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California

Joshua Tree National Park (CA794)

1.05 Million Acres

Estimated Completion FY 10

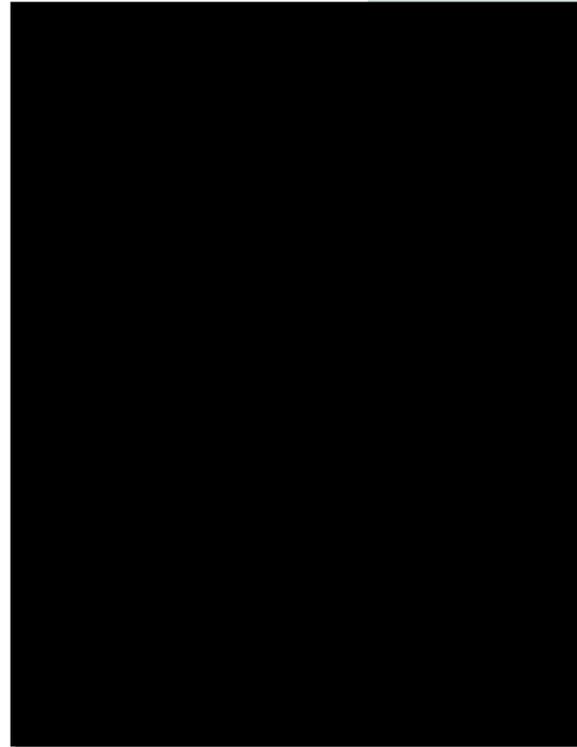
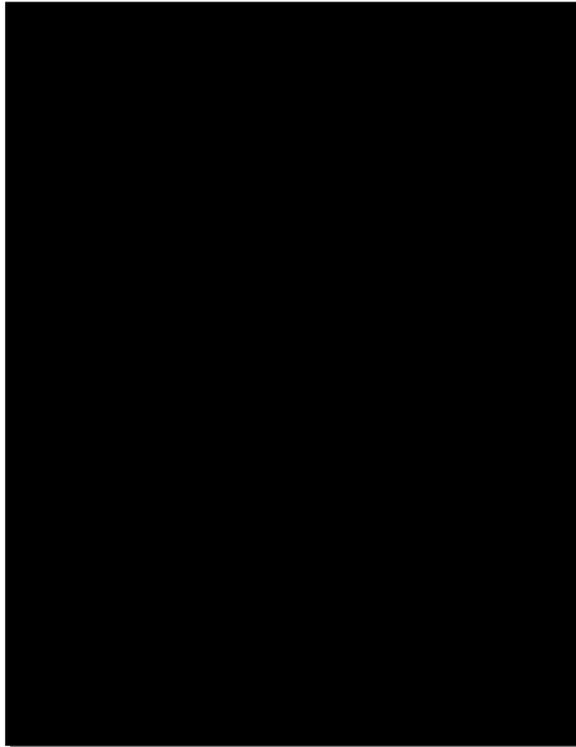
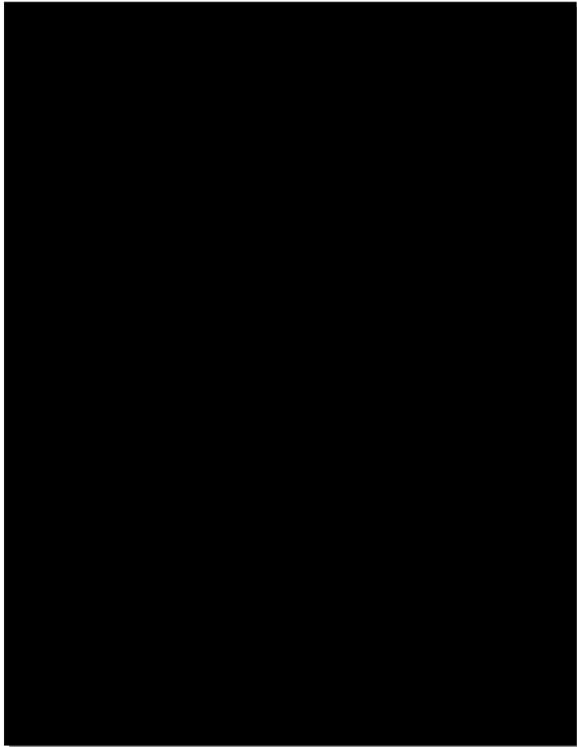


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California

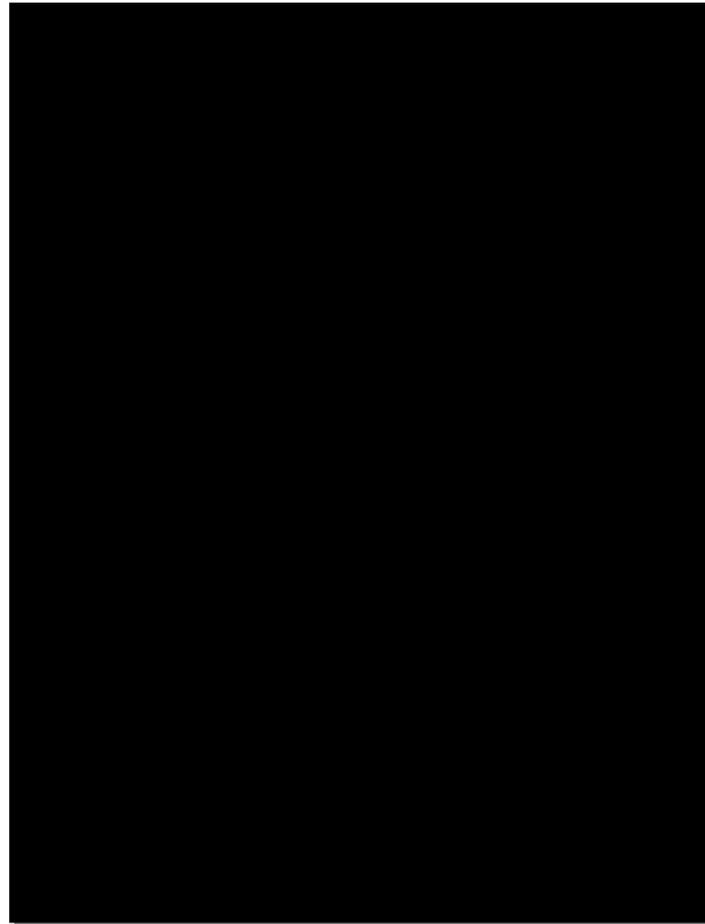
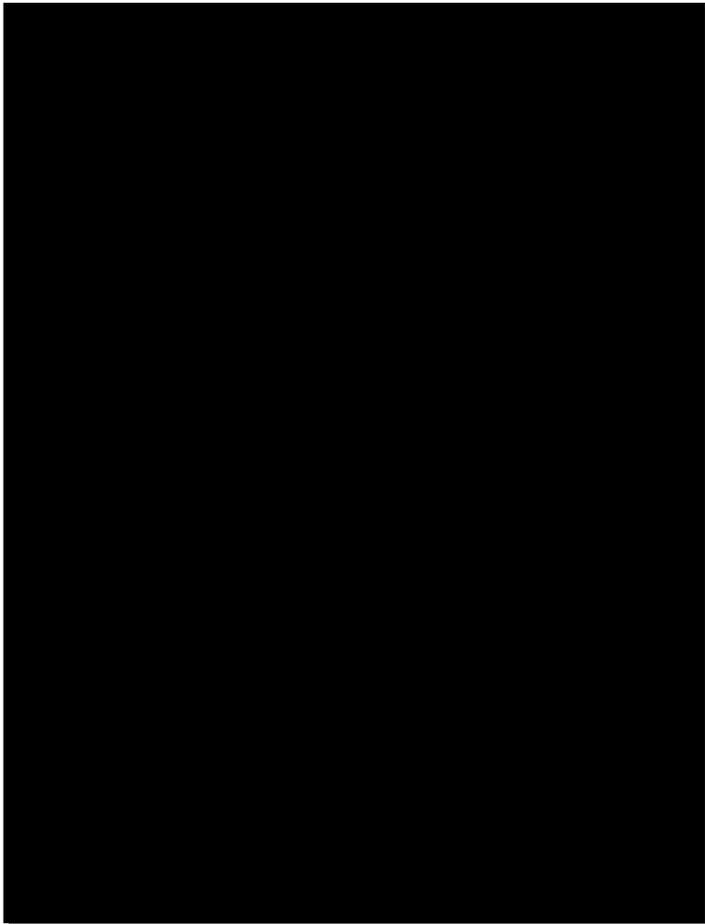


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Mojave Desert Digital Soils Mapping Project Area

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Idaho

City of Rocks National Reserve

- 15,000 acres
- Mapping and digitizing completed
- Metadata needs to be developed
- Looking at setting it up as a new non-MLRA soil survey area

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Nevada

Great Basin National Park (NV7)

700,000 acres

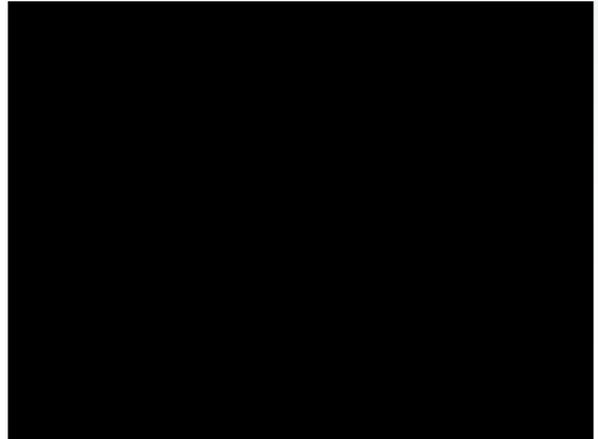
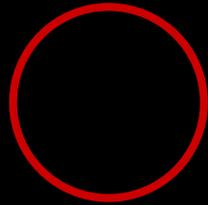
Mapping and digitizing
90% completed

Estimated to be completed
in 2010

Will be set up as a new non-
MLRA soil survey area by
NRCS



Great Basin National Park (NV708)



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Utah

Arches National Park (UT687)

77,000 Acres

Estimated Completion FY 08

Canyonlands National Park (UT688)

340,000 Acres

Estimated Completion FY 09

Directed Soil Survey Crew in Richfield, UT

Soil Survey Project Leader

Soil Scientist

Range Ecologist

Cultural Resource Specialist

**Will also work on Zion NP, Cedar Breaks NM,
and Bryce Canyon NP**

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Washington

North Cascades National Park Complex (WA774)

684,314 Acres

Estimated Completion FY 09

Utilizing Remote Area Soil Proxy (RASP) Model to facilitate mapping in wilderness and other remote areas

Continued Research from Washington State University on RASP Model
NPS Landform Mapping Project also underway to support RASP Model

Deployed Soil Survey Crew in Mount Vernon, WA

Soil Survey Project Leader

Soil Scientist

Forest Ecologist

NPS Physical Scientist

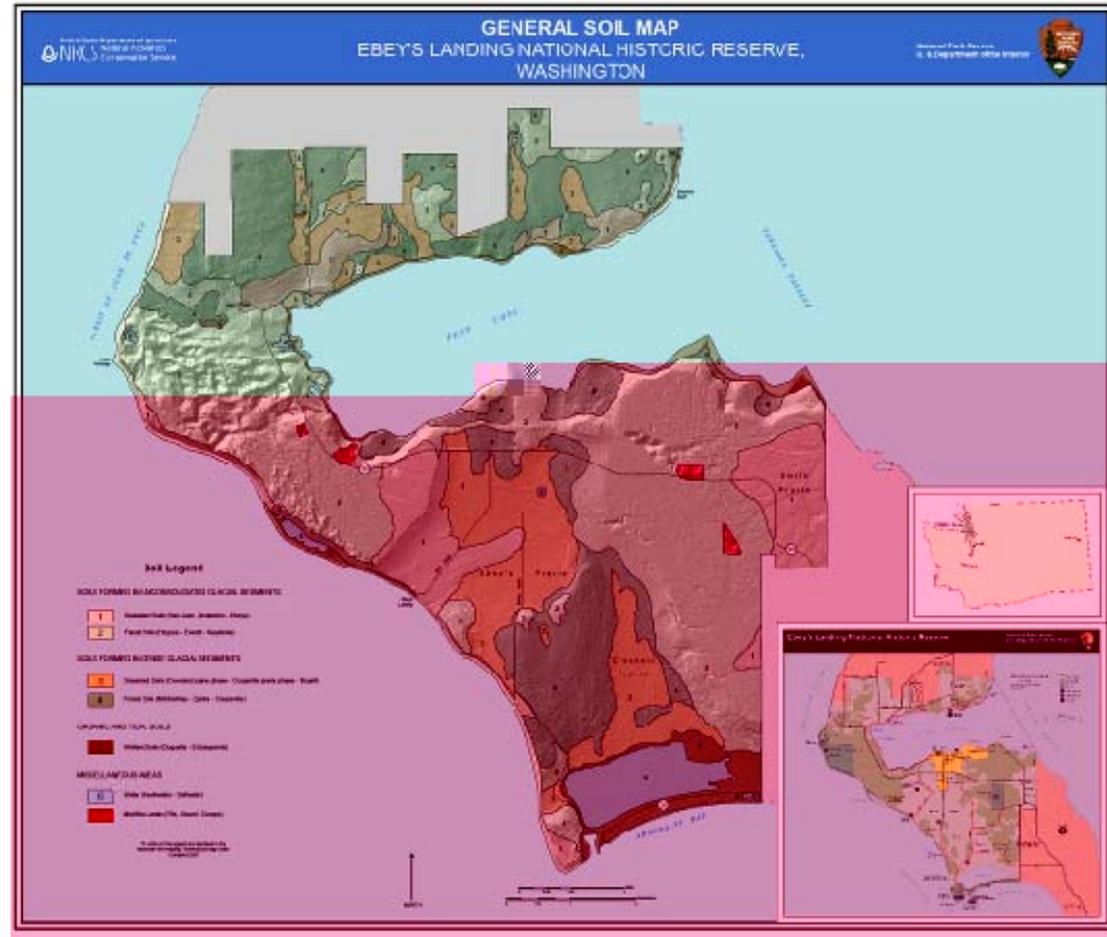
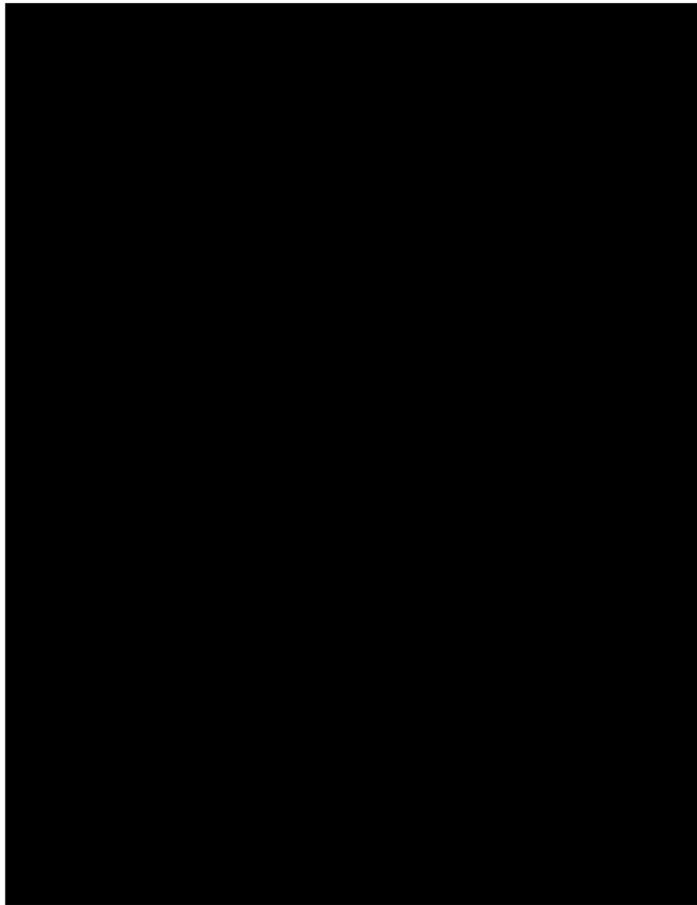
Will also work on Mount Rainier NP, and Olympic NP

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Washington





Research Needs

NPS would like to see new focus on integrated research of soil properties and ecological sites to improve the use and management and interpretation of soils which might otherwise be poorly mapped

Soils with chemical crusts (Death Valley, Yellowstone)

Versus soils developing with desert pavement

Soils with upper horizons dominated by vesicular pores

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Ecological Site Descriptions

Essential and Required for all funded NPS projects in Western Region

Suggest more relevant information in the Soils section of the ESD to showcase relationships of soil properties and plant composition and plant physiology.

Depict “soil states” in State and Transition models

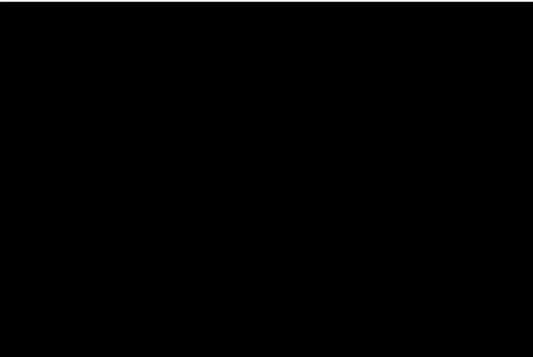
Need to continue to review different levels of ESD’s to meet new concepts of resource inventories currently underway

Consider an ecological site for miscellaneous units named the same (riverwash, badlands, etc.)



NPS Soil Resource Inventory Staff

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Pete Biggam - Soils Program Manager

Judy Daniels - Data Manager

Branon Barrett – GIS Specialist

Troy Kashon – GIS Specialist

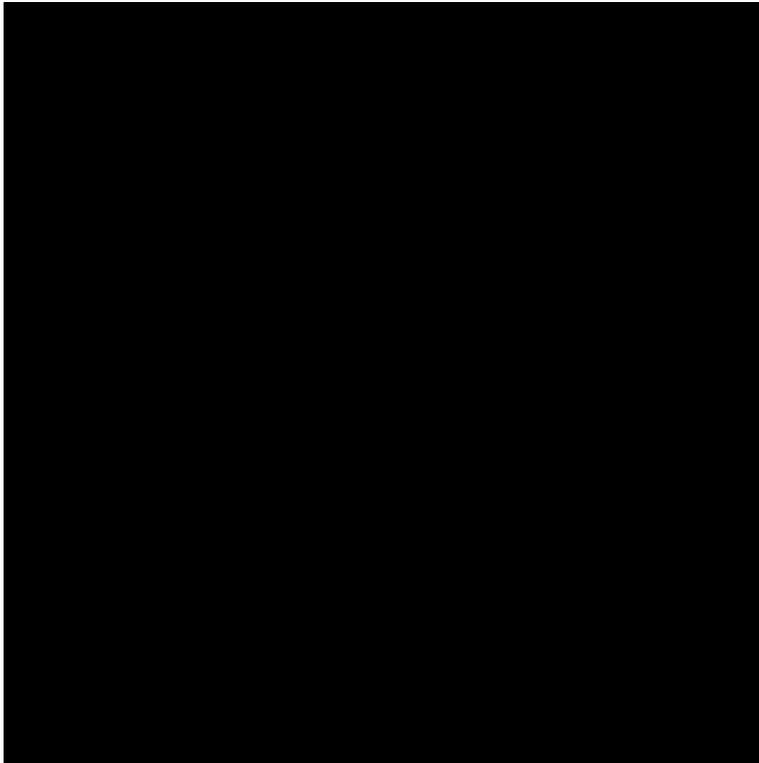
Sue Southard – NRCS/NPS Liaison

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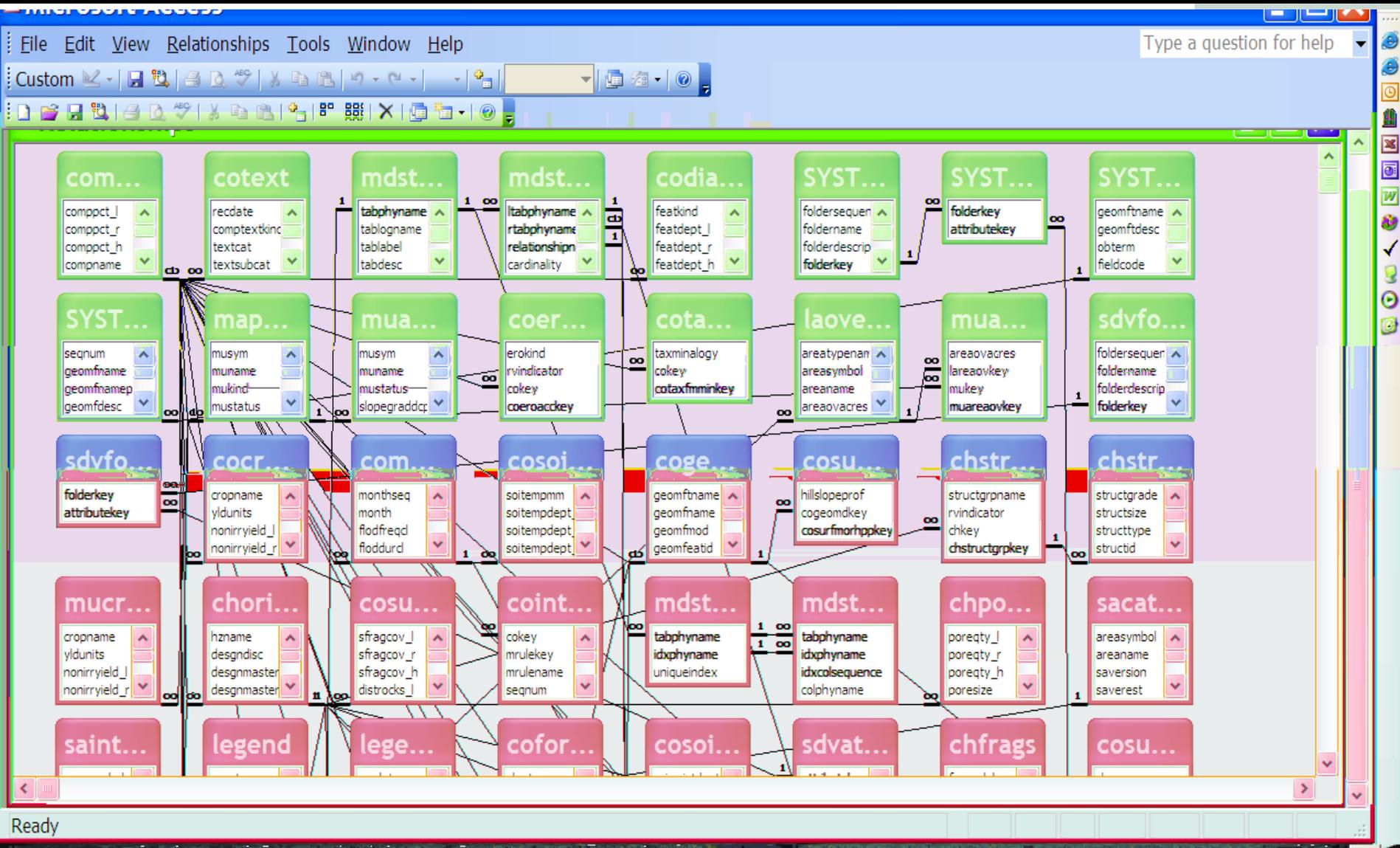


Our Goal.....

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What does the NPS want for soil survey deliverables?

-
-
-
-



within the park

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What does the NPS want for soil survey deliverables?



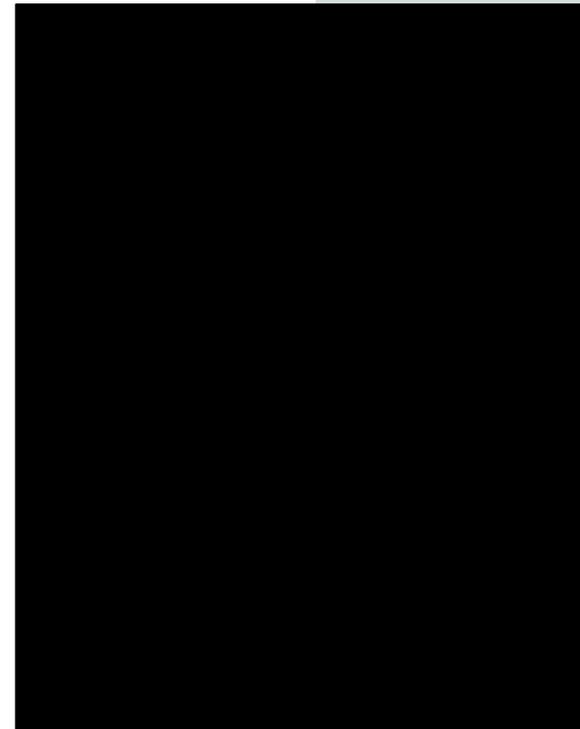
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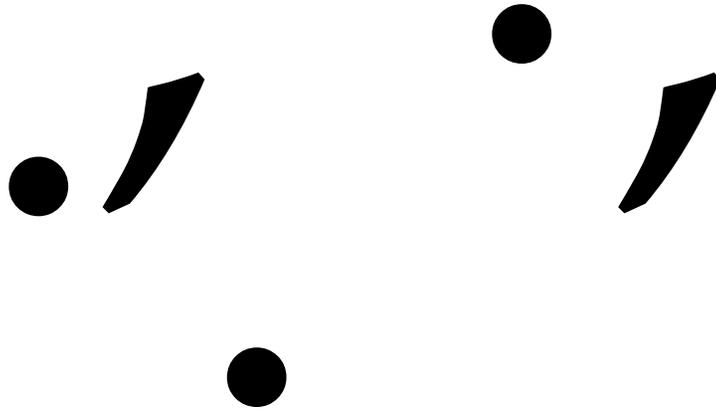
What's the Point with Point Data?



What is needed is not just a point on a map but the DATA associated with the point



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Map Unit Identify Tool

Pedon Identify Tool



System Requirements

- ArcGIS 9.2 sp4
- .NET Framework
- Application requires administrative rights to install

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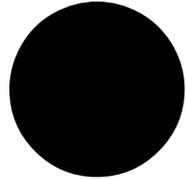
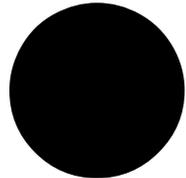
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Why is the map unit description and the
NPS Map Unit Identify Tool important?



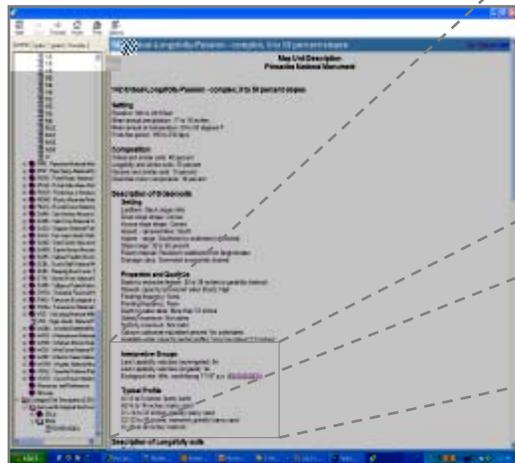
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descriptions

Ecological site



Interpretive Groups

Land capability subclass (nonirrigated): 6e

Land capability subclass (irrigated): 6e

Soil Series: R015X1100CA

ny sand
my sand
avelly loamy sand
tremely gravelly loamy sand
drock

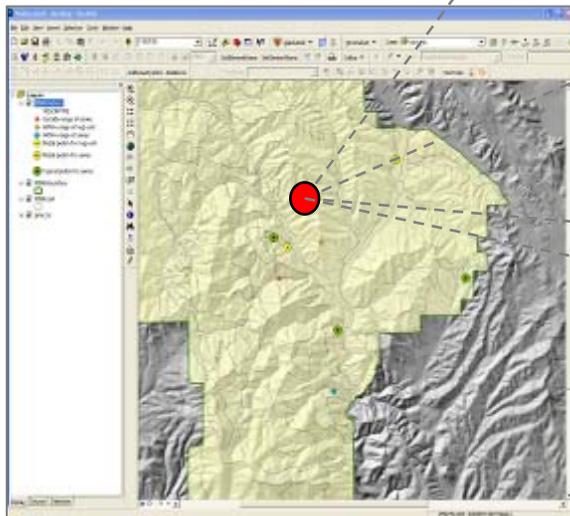
Typical Profile

A1-0 to 6 inches; loam
A2-6 to 14 inches; loam
C1-14 to 23 inches; gravelly
C2-23 to 36 inches; gravelly
Cr-36 to 40 inches; bedrock

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Pedon Identify Tool Map Unit Identify Tool



Soil Pedon Description

Hide Back Forward Home Print Options

Contents Search Favorites

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

Contents Search Favorites

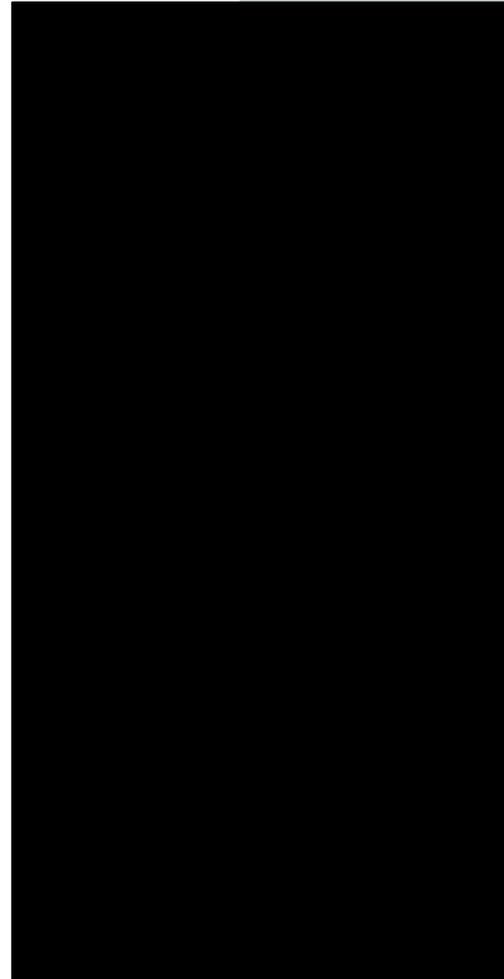
- Pedon Descriptions
 - Error: There is no Pedon
 - PINN - Pinnacles Nation
 - PINN001
 - PINN015
 - PINN018
 - PINN023
 - PINN026
 - PINN074
 - PINN109
 - PINN252
 - PINN254
 - S05CA069010

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Why is the pedon data important and how is it used?

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Future development goals

●
●
● *Get web based context.*

NPS

●
●
● *The ultimate goal is to provide easy access to all of the available soils data to NPS Staff*

