

Soil Business Area Analysis Group SBAAG

Western Regional Cooperative Soil Survey
Conference
Davis, CA
June 28, 2012

Overview of SBAAG

Purpose

- Define an integrated soils information system.
- Develop and maintain the priority slate of projects.
- Serves as a management review body for analysis documents.
- Form ad-hoc teams to get input on specific business concerns.
- Develop draft requirements for applications.

Function

- Identify emerging agency soil data needs that may impact soil business.
- Ensure an integrated approach with other disciplines and technologies.
- Review issues, evaluate impacts, develop recommendations for the SSD leadership.

Organization

- *Executive Sponsor (1)*
 - SSD Director
- *Rotating Members (3)*
 - SSS
 - MO Leaders
- *Liaisons*
 - Ft. Collins ITC
 - NSSC
 - NGMC
- *Ad Hoc Advisory Members*
 - Specialists as needed
- *Advisors*
 - NRCS CIO
 - National Leaders (SSD, NSSC)

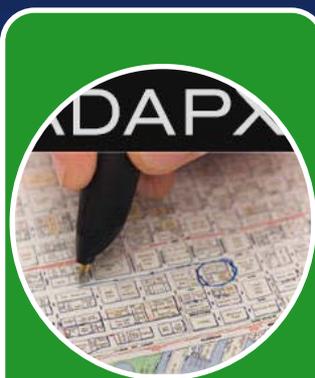
NCSS Topics of Interest



Annual
refresh rate
of official soil
survey data

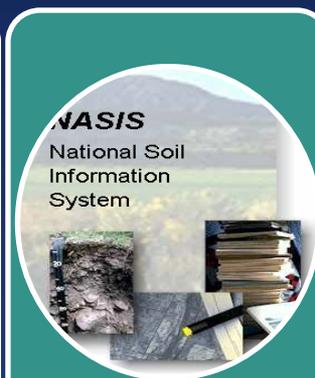


Development
of gSSURGO



Technologies

- Adapx pen
- IOS
- Models



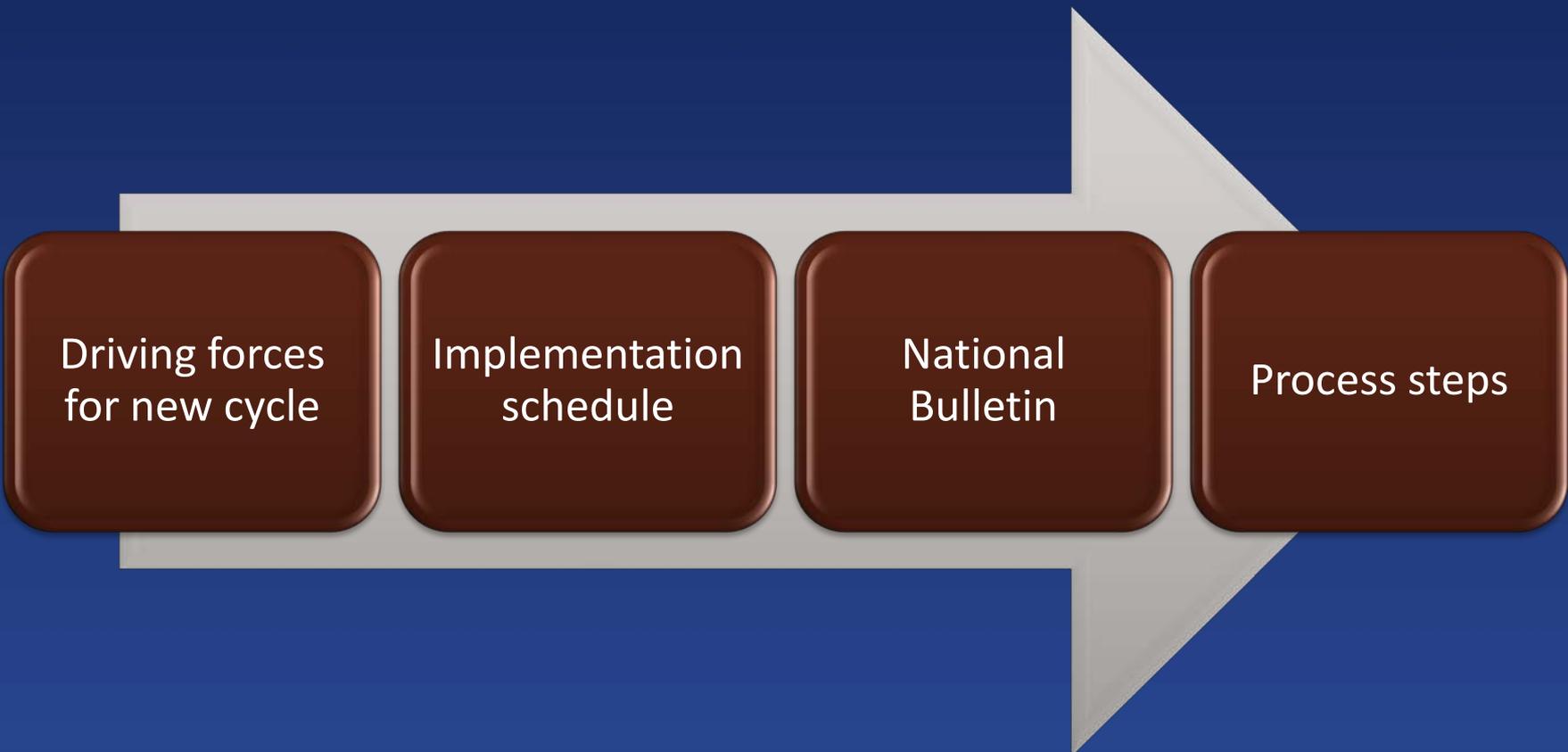
NASIS 6.2 &
Pedon PC 5.0
release
Summer
2012



Web Soil
Survey 3.0
release
Fall 2012



Annual Refresh Rate of Official Soil Survey Data



Driving forces
for new cycle

Implementation
schedule

National
Bulletin

Process steps

gSSURGO – Gridded SSURGO

Driving forces for
new product

Our customers
need more soil
information,
faster as a raster

Repackaged for
large land areas
(States & MO's)

Value Added Look
Up (VALU) Table
(with documented
methods)

gSSURGO Package



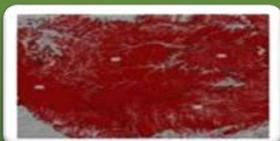
Publicly available at NRCS Geospatial Gateway 2012
<http://datagateway.nrcs.usda.gov>



State-wide vector and 10 meter raster map unit key GIS layers (mupolygon and muRaster_10m) and tables



ArcGIS 9.2 File Geodatabase with pre-built relationship classes among many, hierarchical attribute tables



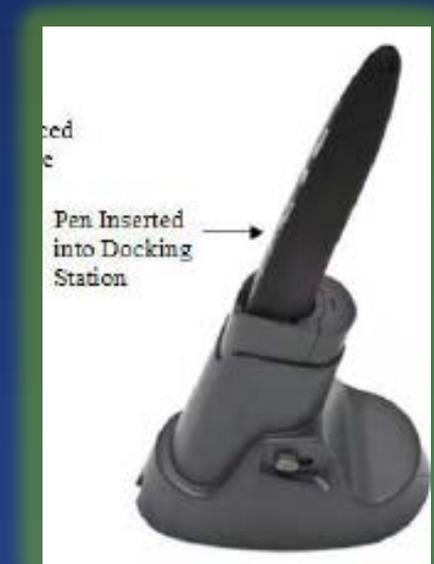
Pre-calculated or -summarized attributes in standard layers and zones in VALU Table e.g. Droughty Soil Landscapes



Planned SSURGO Package for Wetlands Mappers (includes 8 State-wide tables ready for MS Access import)

Adapx Pens and Capturx Software

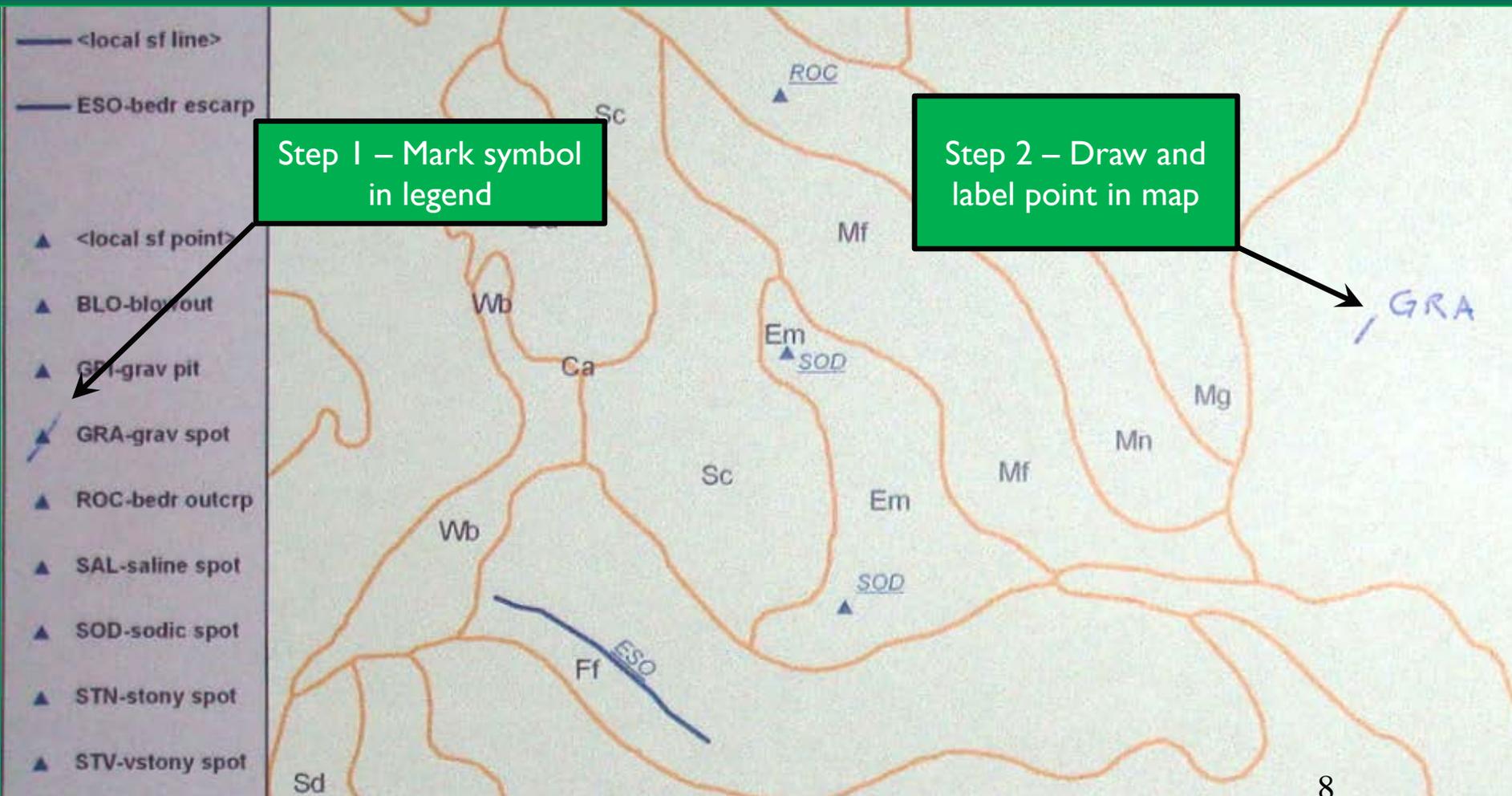
- Pens purchased in 2011
- NSSC forms development
- SharePoint solution



Mapping Point Features

Step 1 – Mark symbol
in legend

Step 2 – Draw and
label point in map



The screenshot shows the ArcMap interface with a map of land parcels. The map contains several orange lines representing boundaries and various labels such as Wb, TL, Mf, SA, Ca, Ac, Sc, Mf, Em, Ff, Mb, and SA. A blue line labeled 'ESO' is visible in the lower-left quadrant. A blue triangle labeled 'SOD' is located in the center, and another blue triangle labeled 'SOD' is in the lower-middle. A blue triangle labeled 'GRA' is on the right side, with a blue line labeled 'Bo' below it. A green callout box with a black border and white text points to the 'GRA' feature. The callout box contains the text: "Step 3 – Import labeled feature into ArcMap".

Layers

- Capturx Markup
- Redline Markup
- mu_polys
- mu_lines
- mu_points
- sf_lines
- sf_points

Scale: 1:10,983

Coordinates: 382471.012 5415527.369 Meters

“The ArcGIS stuff is pretty cool
but what I really want is the
forms capability!”

RaCA 2.14		Field form -- PRINT with Capturx Print Tool						Plot Master -- pg. 1		
Collector(s) AKM, JRT, MJL, MDS		MO Office MO13		1st Char C	Soil Grp ID 1303F	Landuse F	Plot # 303	Date 5/18/2011		
User site id G1303F03		MO Office MO13		1st Char C	Soil Grp ID 1303F	Landuse F	Plot # 303	1st Char: C F		
Plot layout Chain		MO Office MO13		1st Char C	Soil Grp ID 1303F	Landuse F	Plot # 303	Landuse: C F P W X		
LOCATION		RaCA site id C1303F03		Offset azimuth 90°	Offset distance 500'					
LATITUDE				LONGITUDE						
Degrees	Minutes	Seconds	Direction	Degrees	Minutes	Seconds	Direction	Datum		
38	022	21.9	N	80	00	49.5	W	WGS84		
EcoSite id										
EcoSite Name										
State id										
State name										
Phase id										
Phase name										
Land cover Forest		Drained?		<input type="checkbox"/>						
% bare soil 2		Distance to disturbance 25'		Disturbance type SKID TRAIL						
Plantation?		Bedded?		Stage						
Plantation?		Bedded?		Stage						
Dominant species information					BAF		Nmbr In			
Canopy position	Nat'l plant symbol	Local plant name		Order of Dominance	10		4			
OVER		SUGAR MAPLE		1	First 4 'In' trees					
		BIRCH		2	DBH	Height				
UNDER		STRIP E MAPLE		1	65'					
					57					
					45					
					72					

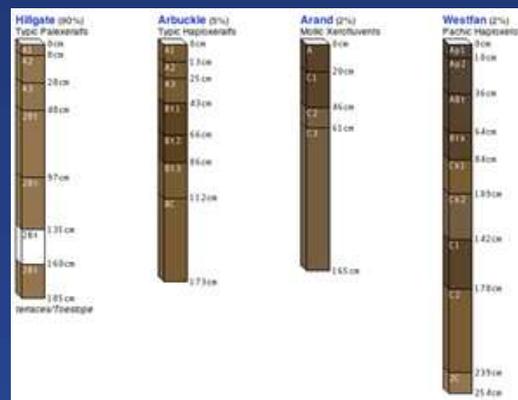
Completed
'Plot Master'
Field Form

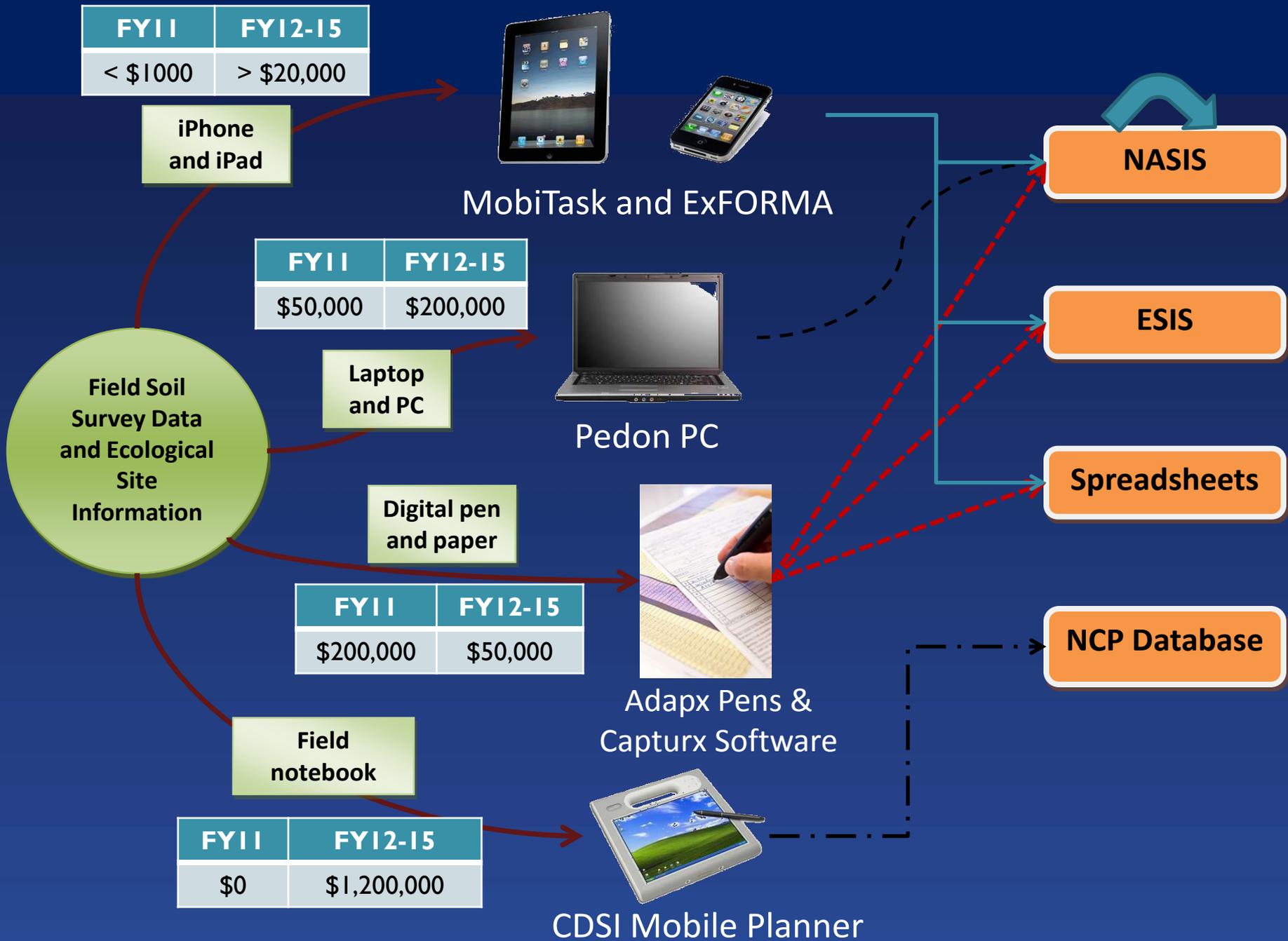
RaCA 2.14		Field form -- PRINT with Capturx Print Tool						Plot Master -- pg. 1		
Collector(s) AAKMJRT, MJL, MD 5		MO Office MO13		1st Char C	Soil Grp ID 1303	Landuse F	Plot # 03	Date 5/18/2011		
User site id C1303E03		MO Office MO13		1st Char C	Soil Grp ID 1303	Landuse F	Plot # 03	1st Char: C F		
Plot layout TRI		MO Office MO13		1st Char C	Soil Grp ID 1303	Landuse F	Plot # 03	Landuse: C F P W X		
LOCATION		RaCA site id C1303F03		Offset azimuth 900	Offset distance 5000					
LATITUDE				LONGITUDE						
Degrees	Minutes	Seconds	Direction	Degrees	Minutes	Seconds	Direction	Datum		
38	22	219.00	N	80	0	49.50	W	WGS84		
EcoSite id										
EcoSite Name										
State id										
State name										
Phase id										
Phase name										
Land cover Forest		Drained?		<input type="checkbox"/>						
% bare soil 2		Distance to disturbance 250		Disturbance type St: i D Trail						
Plantation?		Bedded?		Stage						
Plantation?		Bedded?		Stage						
Dominant species information					BAF		Nmbr In			
Canopy position	Nat'l plant symbol	Local plant name		Order of Dominance	10		4			
Over		SUGAR MA PLF		1	First 4 'In' trees					
		BIRCH		2	DBH	Height				
Under		STRIP E MAPLE		8	650					
					57					
					4115					
					72					

'Plot Master'
Worksheet with
Imported Data

IOS Development

- Cooperative agreement with UC-Davis
- Work with eXFORMA and MobiTask





jNSM – Java Newhall Simulation Model

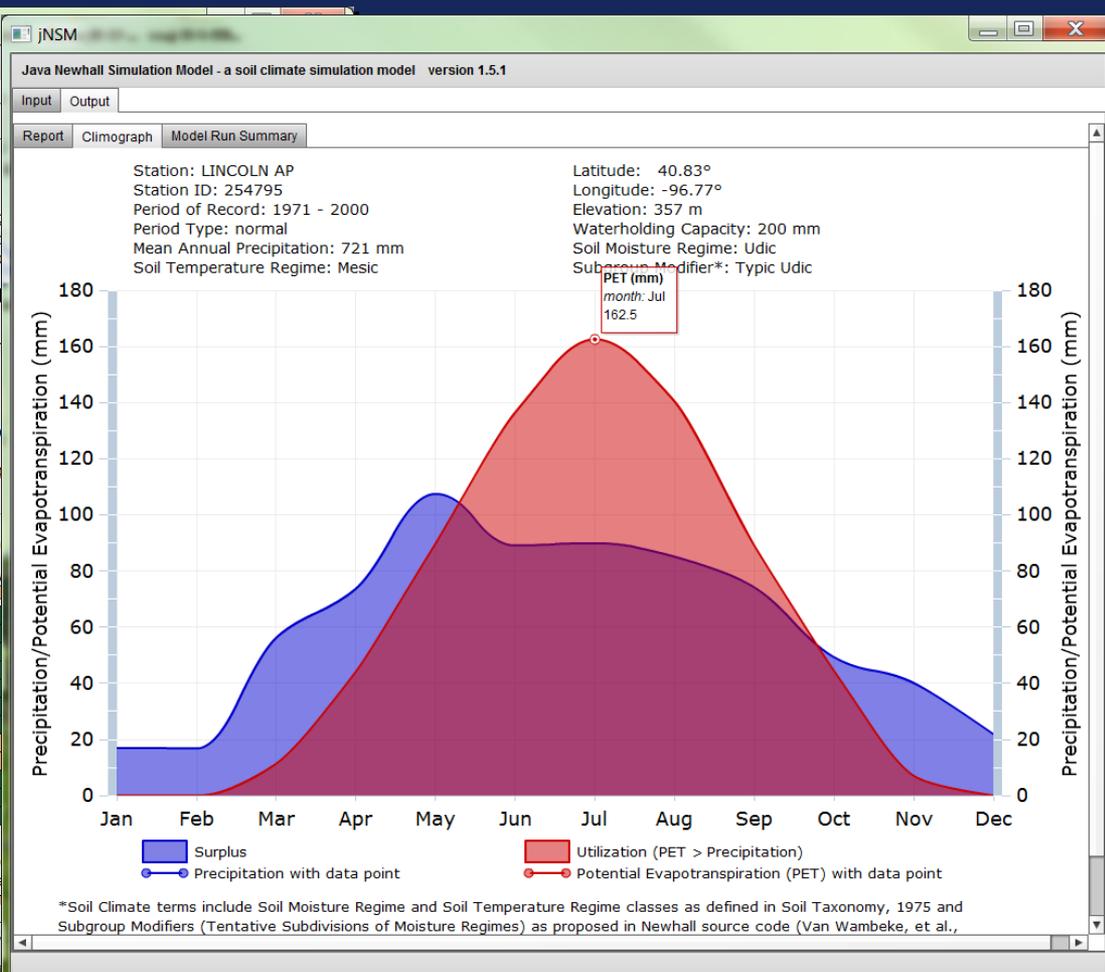
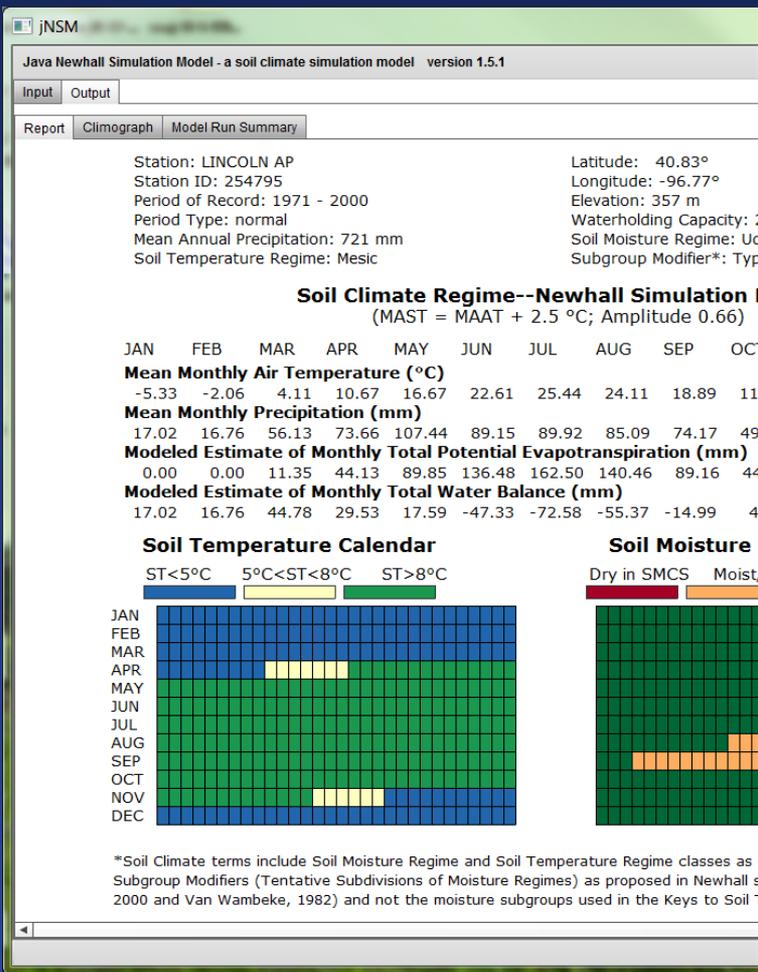
Needed better understanding of soil climate through time

Traditional NSM model redone using JAVA with batch input tables

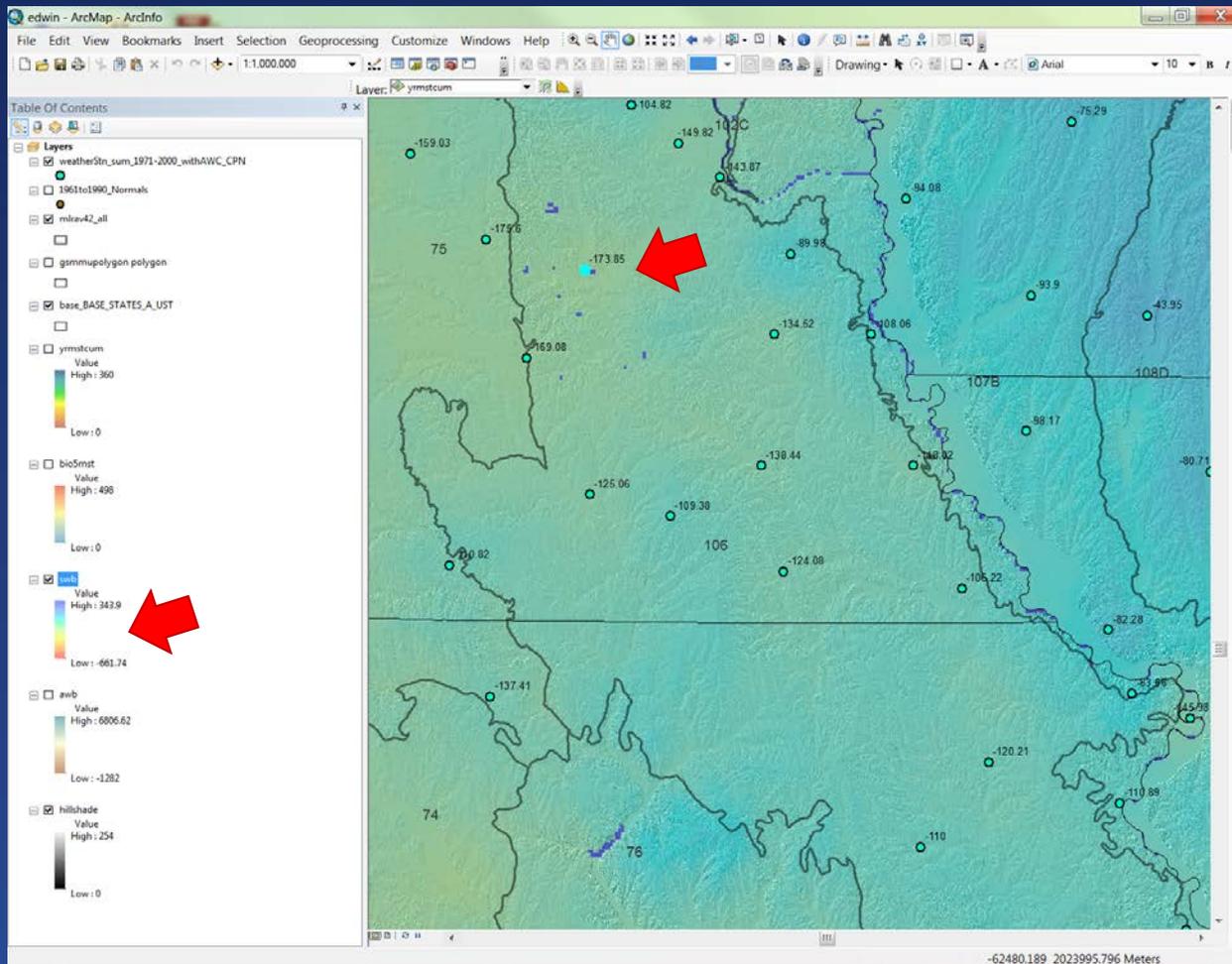
Uses weather, SCAN, or local soil climate monitoring stations – monthly air temp & precipitation

National Bulletin on CCE jNSM v1.5.1 release and Webinar and Website

jNSM – Java Newhall Simulation Model



jNSM – 1971-2000 Summer Water Balance mm Lincoln AP weather station plus PRISM map surface 800 m (Winzeler, et al. 2012)



Identify

Identify from: <Top-most layer>

- weatherStn_sum_1971-2000_withAWC_CPN
 - LINCOLN AP

Location: -64,808.527 1,980,604.043 Meters

Field	Value
SMRCLASS	Udic
SUBGRPMOD	Typic Udic
STRCLASS	Mesic
AWB	-7.03
SWB	-173.85
YRDRYDCUM	0
YRMDDCUM	0
YRMSTCUM	360
BIO5DRYDCUM	0
BIO5MDCUM	0
BIO5MSTCUM	219
YRMSTCONS	360
BIO5MSTCON	207
SMRDRYCONS	0
WTRMSTCONS	120
PETJAN	0
PETFEB	0
PETMAR	10.88
PETAPR	45.86
PETMAY	92.13
PETJUN	139.59
PETJUL	158.7
PETAUG	139.56
PETSEP	89.77
PETOCT	44.6
PETNOV	5.95
PETDEC	0
WBJAN	17
WBFEF	17
WBMAR	45.12
WBAPR	28.14
WBMAY	14.87
WBJUN	-50.59
WBJUL	-68.7
WBAUG	-54.56
WBSEP	-15.77
WBOCT	4.4
WBNOV	34.05
WBDEC	22
PDTYPE	normal
RUNDATE	20120122
FI FNAMF	I:\NCOI\N AP 1971 2000.xml

Identified 1 feature

NASIS 6.2 Features



a number of bug fixes



performance enhancements



user customizable choice lists similar to those in
Pedon PC



enhancements to the spreadsheet import process



import of GPS coordinates

NASIS 6.2 Features

many new tables and columns in the Pedon/Site data structure to accommodate data gathered from...

- SSO mini-labs
- Infiltration tests
- Ksat tests
- Soil temperature and moisture data
- IRIS tube data

NASIS 6.2 Features

Some rearrangement of columns between tables.



Adding a Pedon Taxonomic History table to allow tracking of classification changes for a pedon through time. This accounts for the data formerly submitted on Soil-8 forms.



An updated pedon import routine to match updated Pedon PC.



Will be compatible with Windows 7 OS and SQL Server Express 2008.

NASIS 6.2 Features

Incorporation of Soil Classification (SC) database into NASIS.

This will allow use of the SC database as a lookup of series names to be used for Components and Pedons

The ability to import the classification of a series into the component and pedon Soil Taxonomy fields.

These data tables will be viewable in NASIS but not editable via the NASIS interface. Editing will only be done with the SC/OSD Maintenance Tool.

The OSD files themselves will NOT be included in NASIS.

NASIS 6.2 Features

Improved component selection in the Export dialog box – similar to what was in NASIS 5.x.



Much improved capability to fine tune the contents of the local database by controlling which data objects get downloaded from national to local db.



Ability to remove individual objects from the local database.

Pedon PC 5.0 Features

Migration to ACCESS 2007 and .accdb file format.



With this release we will no longer support the .mdb file format



Many but not all of the additional tables and columns listed above that are being added to NASIS 6.2



We also added columns and tables that have been added to Site/Pedon tables in NASIS since 2002 that have never been added to Pedon PC

NCSS Database

Laboratory data from universities for more than 20,000 pedons have been added to the database.

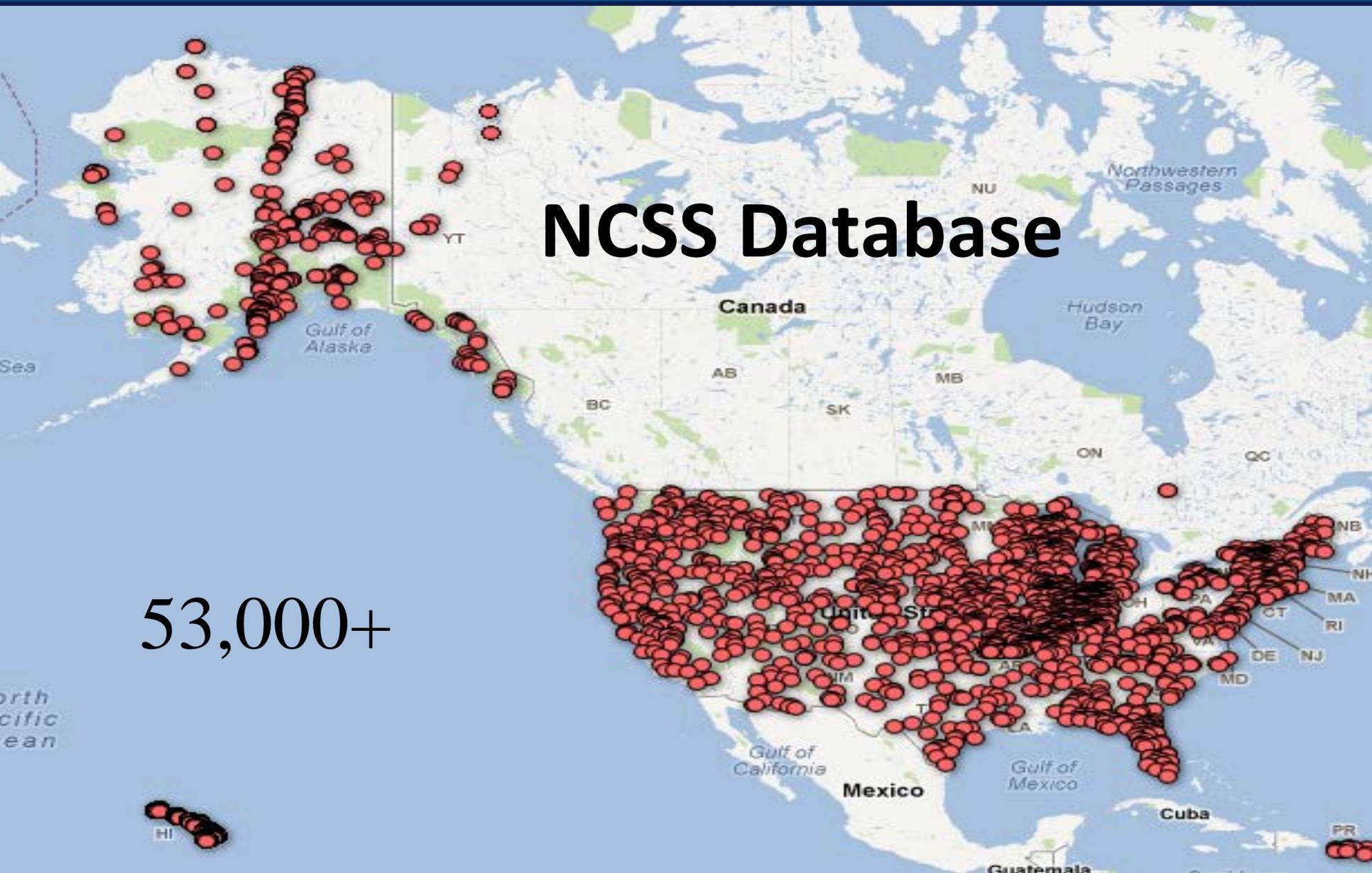
Tables in the NCSS database that duplicate NASIS will no longer be used.

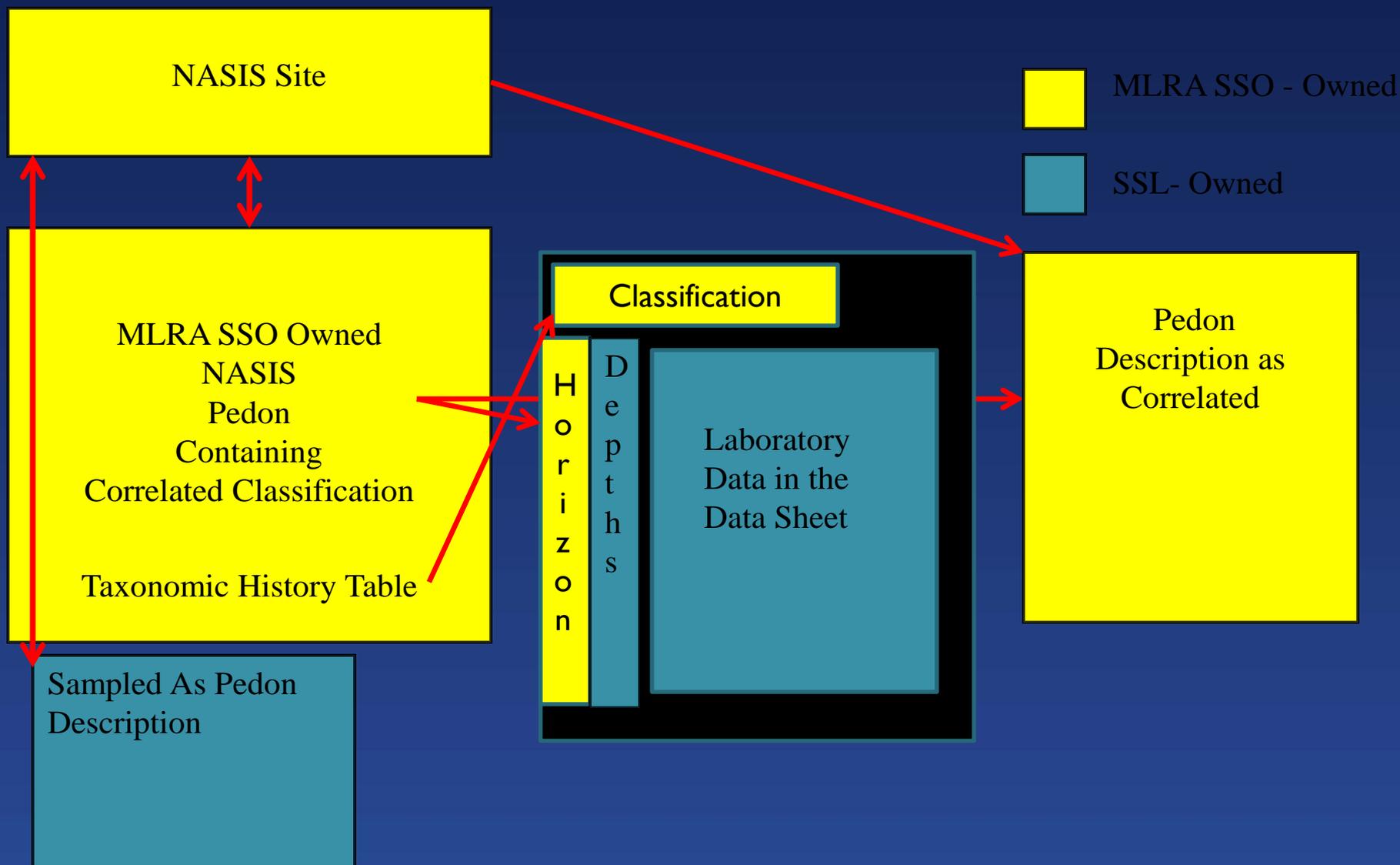
The most recent classification will be delivered along with the most recent profile description.

The Web interface is the most commonly used product. ACCESS databases of the laboratory data may be requested through the National Soil Survey Center.

NCSS Database

53,000+





Point Data Collection for the Future

Migrate Pedon PC and Pedon PC Plus features into NASIS



Evaluate the use of Digital Pen Technology



Migrate Ecological Site data into NASIS



Develop/migrate forms based data entry capability for ecological site data

WSS 3.0 Features



Totally redesigned backend application and database

- Will utilize SQL Server 2008 dbms and other software instead of current ESRI tools.
- Will streamline the server configuration resulting in fewer servers being needed – big cost savings
- Much improved performance and reliability
- Will allow for significant increase in size limit of AOI

WSS 3.0 Features

Current report generation and data download functions in SDM will be migrated to WSS

SDM application will be shut down

eFOTG links to be migrated from SDM to WSS as much as possible

Will utilize color imagery from **bing** instead of our NAIP imagery.



WSS 3.0 Features

Will have some ability for user to modify colors and/or width of line work and fonts on the maps.

Hope to have updated navigational data layers – hydrography, roads, etc.

Updated Federal land boundaries as available.

Will accommodate line and point map units.

SDM database will be converted to WGS 84
This will allow for the inclusion of Pacific Island Area datasets

