5-Using Pedon PC.ppt

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Title: **5-Using Pedon PC**

Type: □x Skill □x Knowledge

Performance Objective:
Trainee will be able to use Pedon PC to input pedon descriptions and site data.

Trainer Preparation:
Make sure the participants have machines that they have write permission to the C drive and access to the internet.

Special Requirements:

- CCE configuration to ensure that Microsoft Access is compatible with Pedon PC.
- A version of Pedon PC must be installed on the computer for this module.
- (Downloading data from the DataMart and importing data into a SSURGO template is optional.)

Prerequisite Modules:

- Pedon PC Setup
- Pedon PC Customizing Choice Lists

Procedure:

- Trainer will use as a job aid to help prepare for this task.
- Trainer can then use this job aid as a training module to accomplish the task.

Notes/Purpose:
The purpose is for the trainee to learn how to input pedon descriptions into an ACCESS database using Pedon PC.

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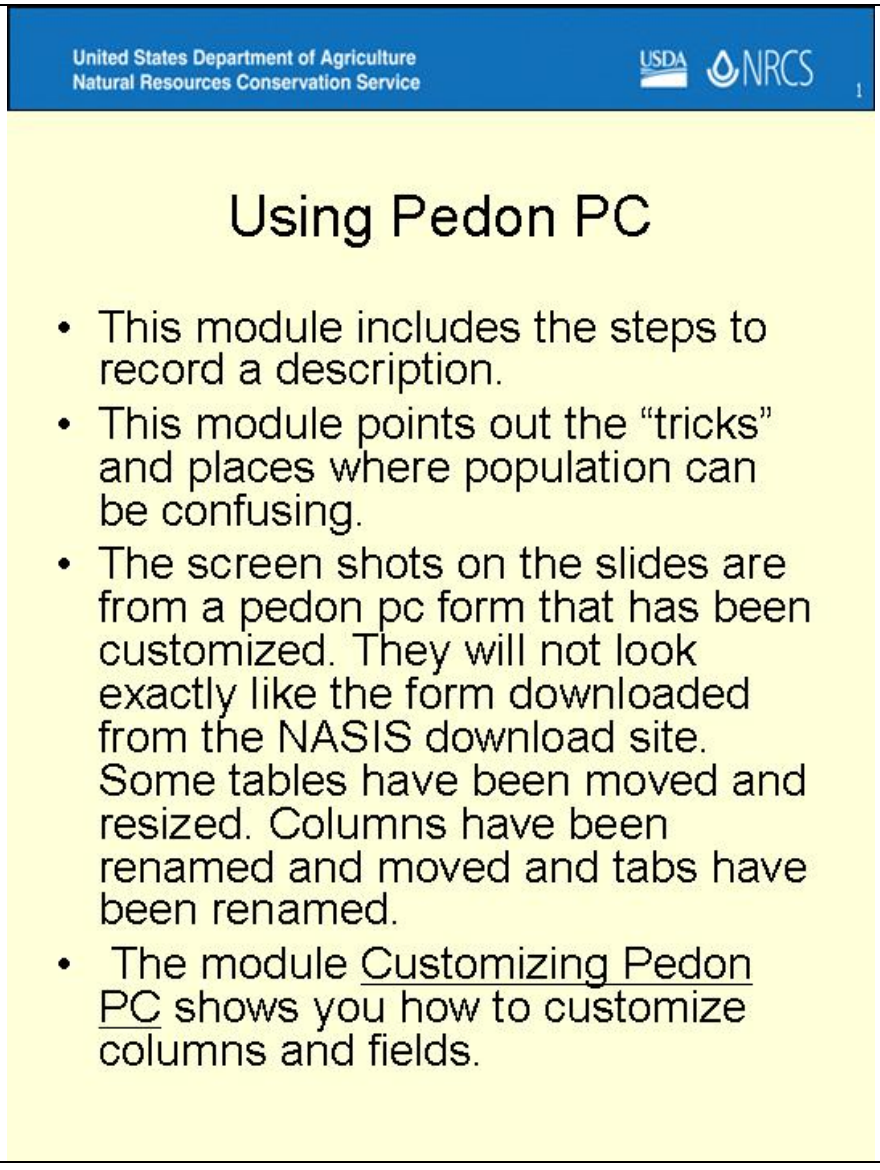
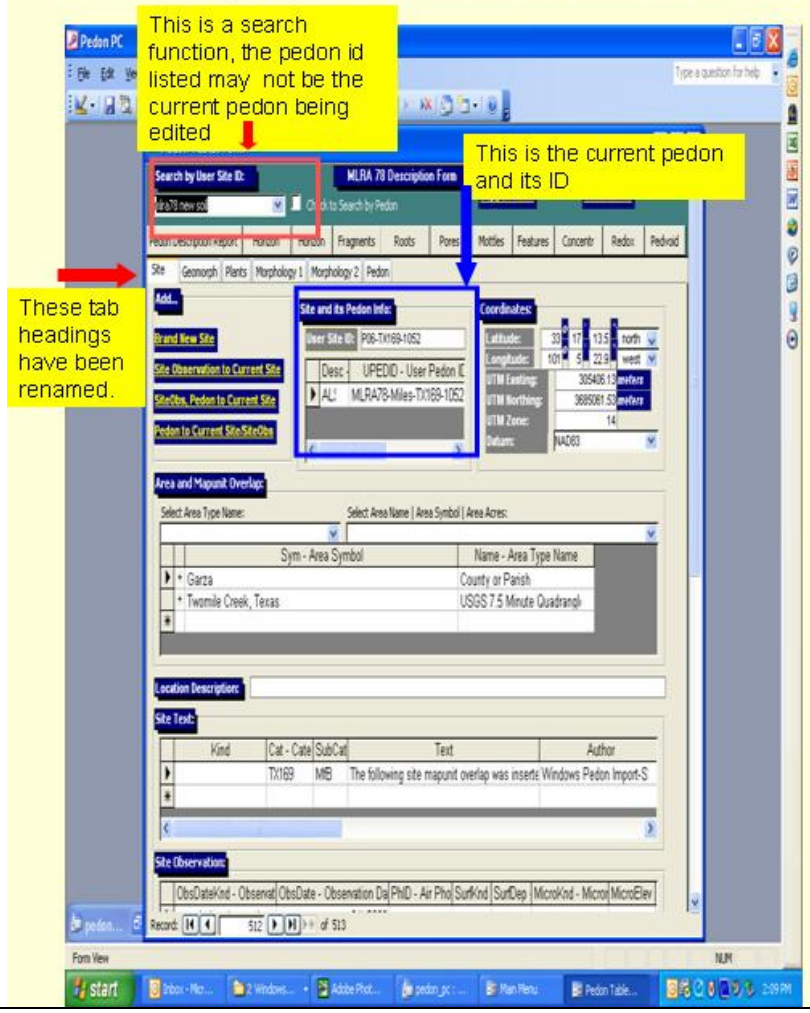
Slide 1



This module describes the main features of the forms as they relate to populating a pedon description.
These slides point out all of the "tricks" and spots where the requirements of the forms may not be readily apparent.
This particular module was developed by Alan Stahnke from Texas. He used a customized version of Pedon PC for developing the training module. Since many individuals may customize their versions of Pedon PC it is important for students to recognize the flexibility of the application as well as the similarity between customized interfaces.

Slide 2

Main screen and the site tab. If you are using the auto-population tool, much of this screen is filled out when a point is clicked or the GPS is selected.

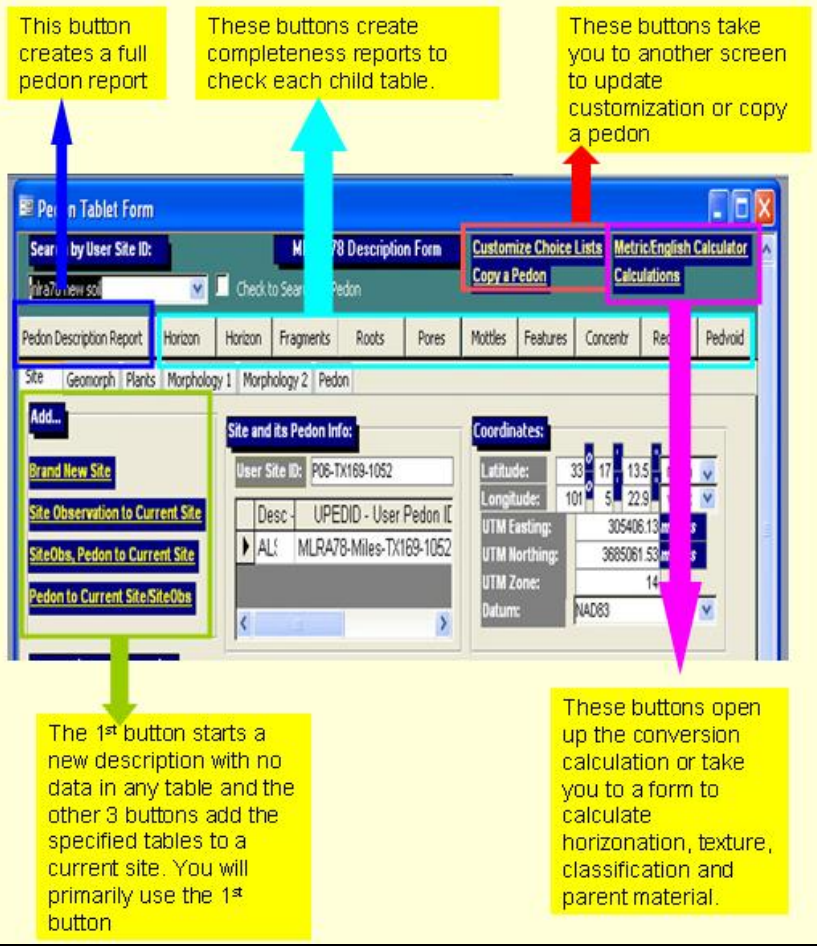


The auto-population tool will be discussed in a separate module. Users can manually populate the location information using a stylus or mouse and keyboard. However, the auto-population feature uses ArcMap and a GPS to populate about 50 characters with one mouse click.

It is important to note that Pedon PC can be used as is to populate the pedon.mdb. Customization is used to increase the efficiency of population for local conditions. Changing names of tabs or fields is strictly personal preference and does not affect the use of the application.

Slide 3

Hotlink functions

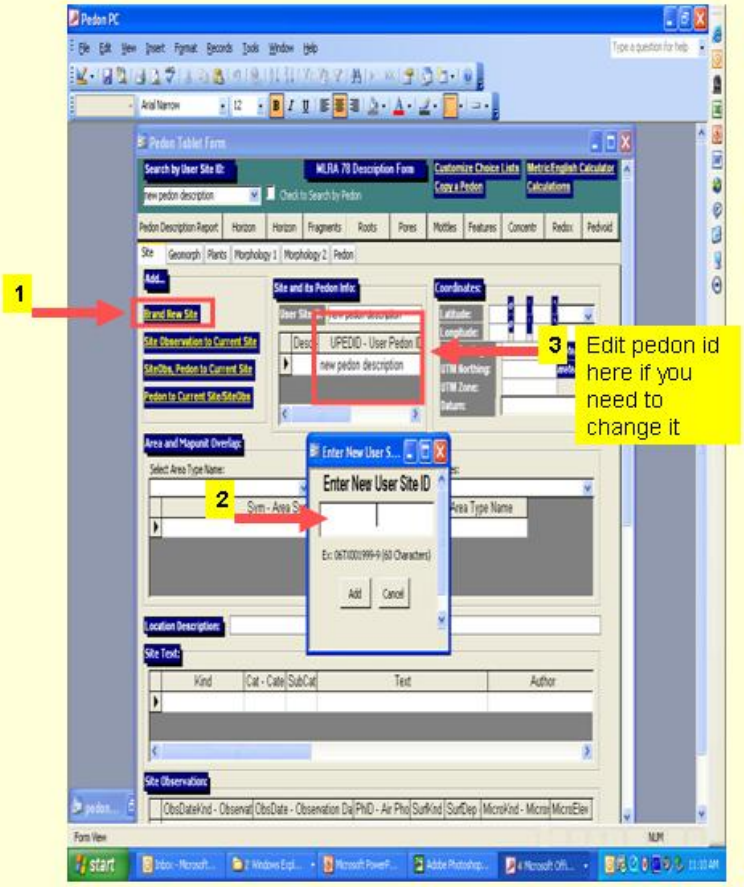


The reports in Pedon PC help the user verify that the pedon is completely filled out. The "official" pedon description report is in NASIS and should be used for all official documents.

The most often used button is the Brand New Site button which creates a Site, Site Observation, and Pedon which are all linked to one another.
The Customize Choice List button is a quick link to the Customize Choice List form.
The Copy a Pedon button is a quick link to the Copy a Pedon Form.
The Metric/English Calculator is a quick link to the Metric/English Calculator which helps the user convert English to Metric units for input into the database.
The Calculations button is used to open the form for calculating the horizon designation, texture, classification, and parent material fields.

Slide 4

Starting a description. Select the yellow hotlink called Brand New Site. A box appears to enter your site id. This will give both your site and pedon id the same name.



When you click on Brand New Site, a box shows up which allows you to name the site. Naming conventions are described in the Laboratory Methods Manual, the Field Book for Describing Soils, and other Pedon Coding Guides and Manuals. The naming conventions for some offices are specific for certain kinds of pedon descriptions.

If your method of naming pedons is to have a different name for the site than the pedon, you can edit the pedon id in the field on the form.

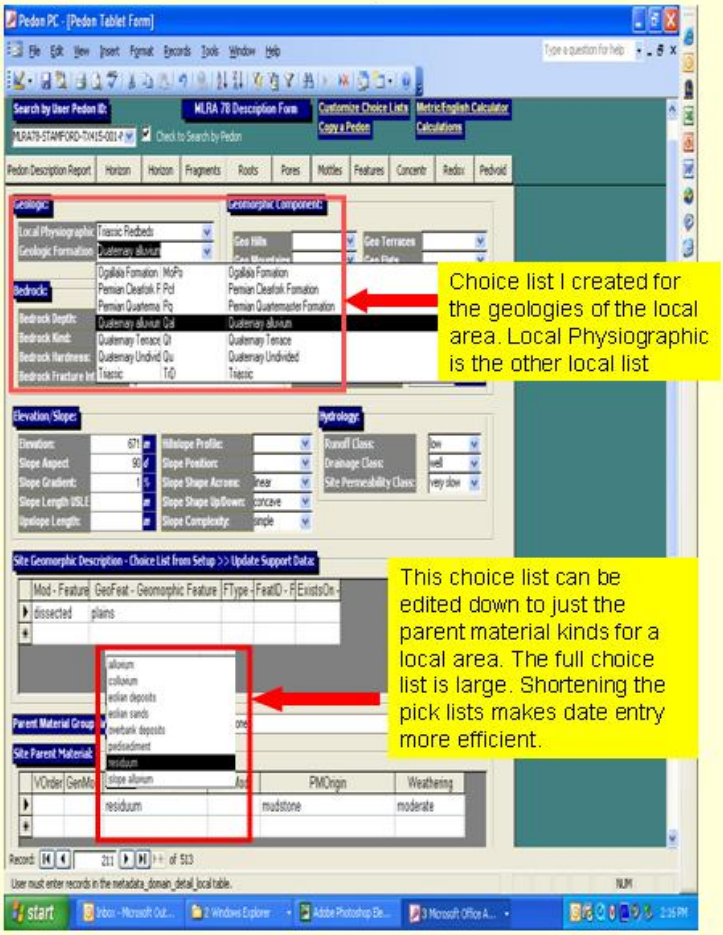
Slide 5

Starting a pedon from ArcMap

- There is a second method of starting a description by using the auto-population toolbar from ArcMap.
- If possible, this is the best method to start a description.
- There is some setup required for it to work.
- This method is covered in the Module called “Using Auto-population Toolbar”.

Slide 6

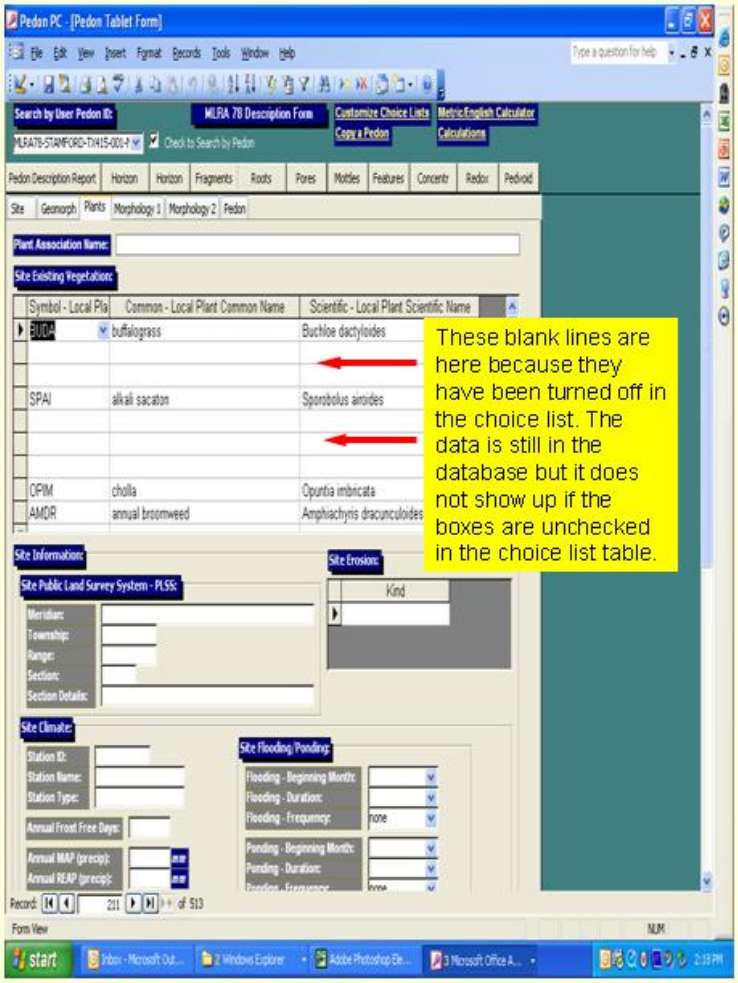
This is the tab where you record geomorphology type data. There are two places here that look at the local choice list you create.



Pedon PC includes the capability to change some text fields from NASIS into drop down pick lists. This capability has been added to increase the efficiency and uniformity of data entry. By creating a pick list, a single click with the stylus can be used to input a word or phrase. In addition, that word or phrase will be spelled consistently each time.

Slide 7

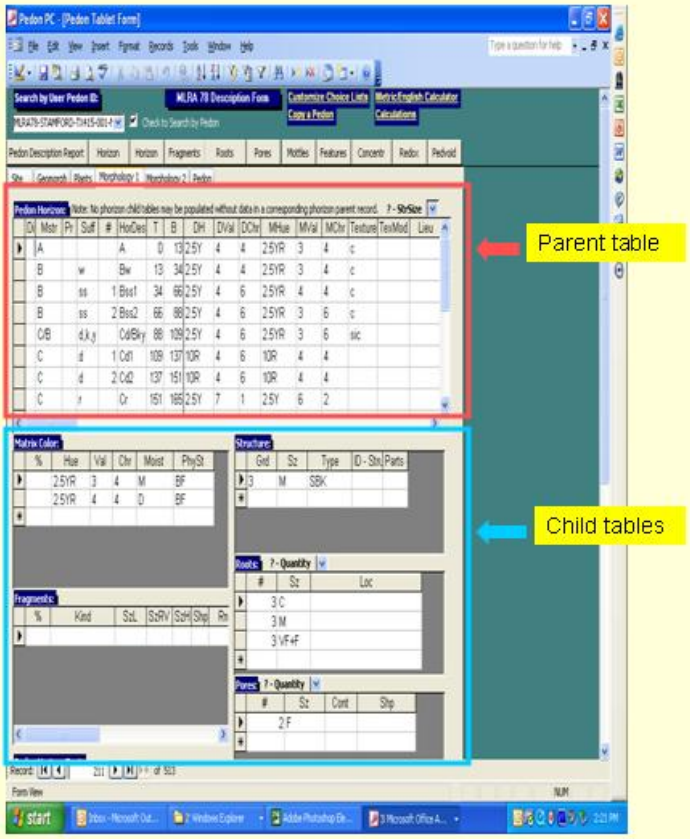
The application does not display data for hidden choices.



The Choice lists are controlled by intermediate tables. If choices in the intermediate tables are removed, the form does not have anything to display even though the data is in the database. If the user were to open up a fresh copy of Pedon PC with the appropriate plants lists loaded, all of the data would show in the form.

Slide 8

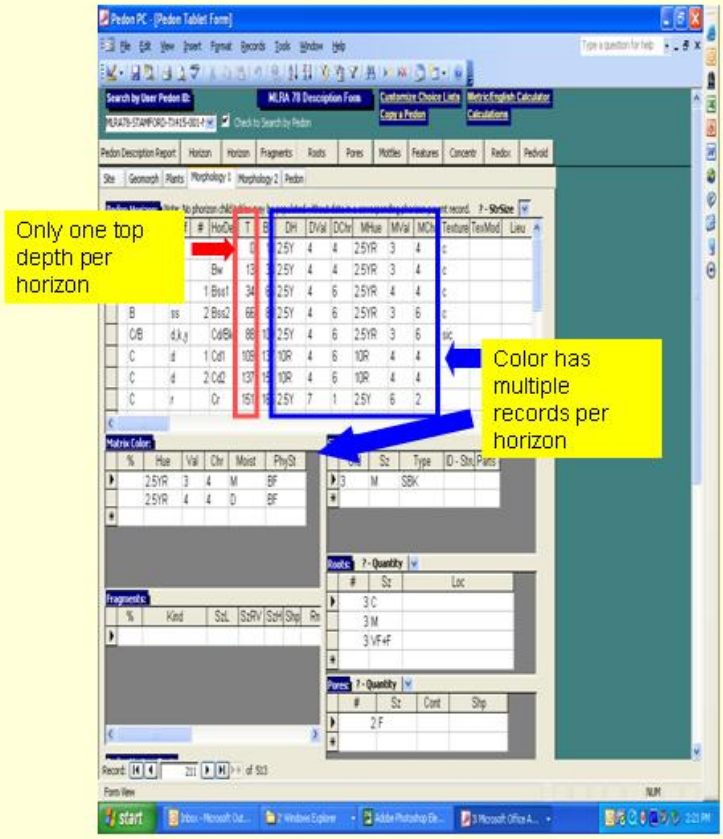
The morphology 1 and 2 tabs (horizon table-renamed from horizon1 and horizon2 tabs) are where most of the data population occurs. The pedon horizon table is the parent table. The tables below it are the child tables.



In this case the horizon 1 and horizon 2 tabs have been renamed morphology 1 and morphology 2. There are four tables which have been repeated in the horizon tab. These are the color, texture, horizon suffix, and structure. This has been done to increase the efficiency of data population. The first record for each of the child tables can be entered into the parent (horizon) table. Subsequent entries must be populated in the child tables below.

Slide 9

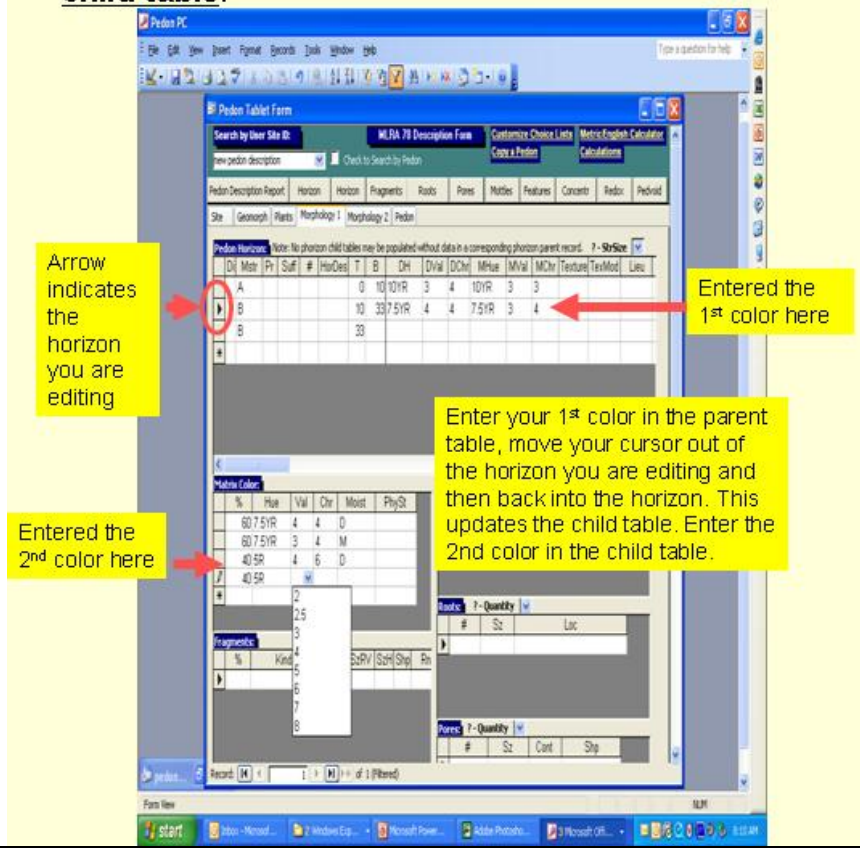
Some data elements like depth or pH occur once and only once per horizon. This type of data is only in the parent table. Other types of data like color or roots can have more than one data element per horizon. This data goes into the child tables.



The user has the opportunity to customize the horizon tabs (morphology tabs) so that elements in one tab are hidden in the other. This can be used to make the forms more streamlined for data entry.

Slide 10

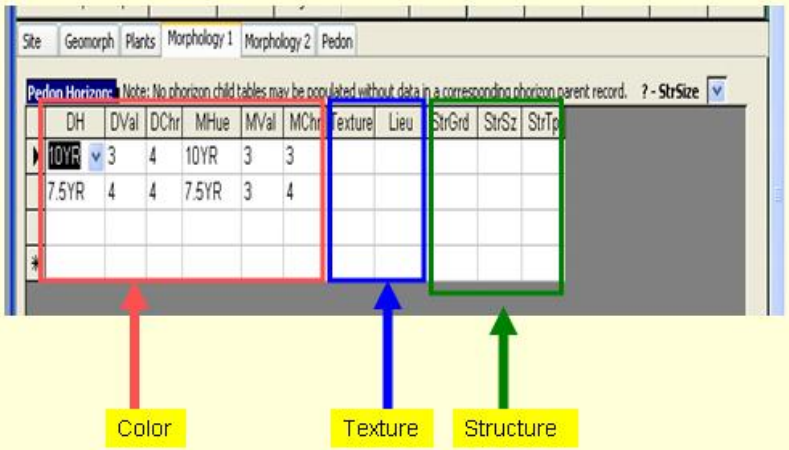
Some data elements in the parent table have a child table. If you are only recording one dry color, you would do it in the parent table only. Sometimes you have more than one dry color per horizon. In these cases you would **record the 1st dry color in the parent table** then **record the 2nd dry color in the child table**.



This requirement for populating the first record in the parent table is necessary for Pedon PC 3.0 and earlier. The requirement was designed into the application to increase efficiency of editing. Since that time, there have been enough individuals using the child tables to populate the database that PedonPC 3.01 and later have been designed to allow users to populate the horizon tables in either direction. Parent to child, or child to parent.

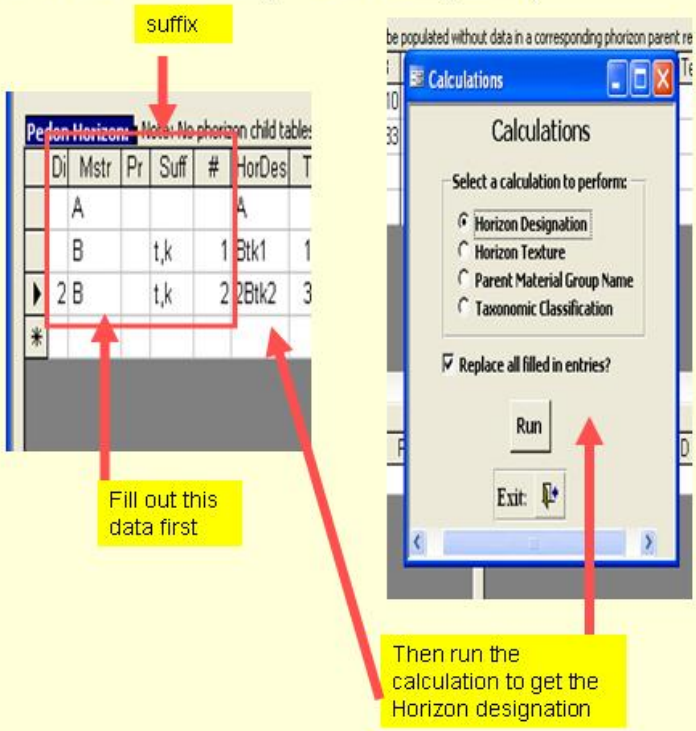
Slide 11

These are the data elements that have child tables but require you to populate the first occurrence in the parent table in Pedon PC 3.0 and earlier. These were put in the parent table to speed up data population.



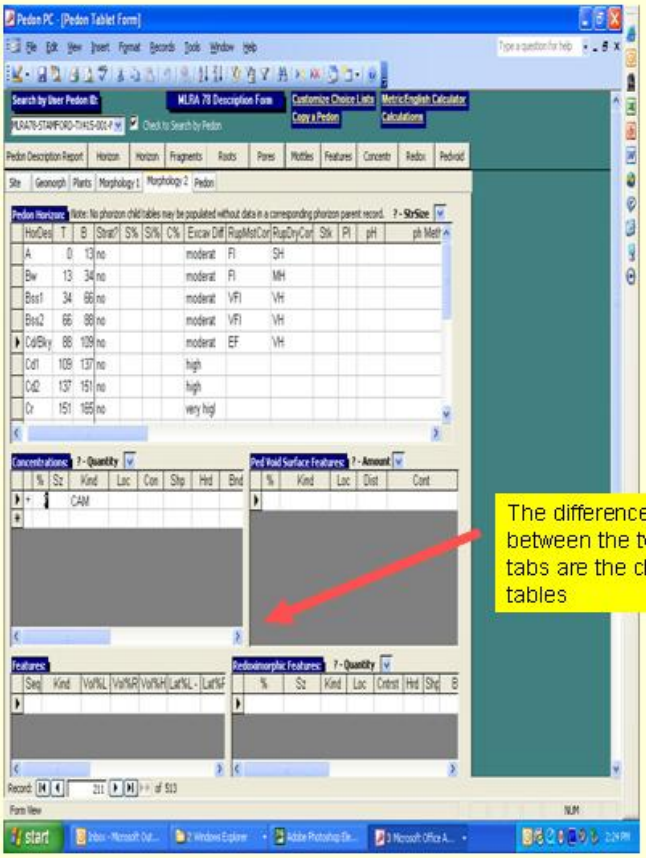
Slide 12

Horizon suffix also has a child table and is populated in the parent but is handled differently. It is one of the few elements that must be typed into the parent table. Each suffix letter is separated by a comma in the one field. Ex: t,k,ss. You may also populate the suffix using the dropdown choice lists in the child table. Once you have all of your horizonation data entered you hit the yellow calculations link at the top right and the calculations form opens. Select the correct radio button and run. This will fill in the HorDes column (Horizon Designation).



Slide 13

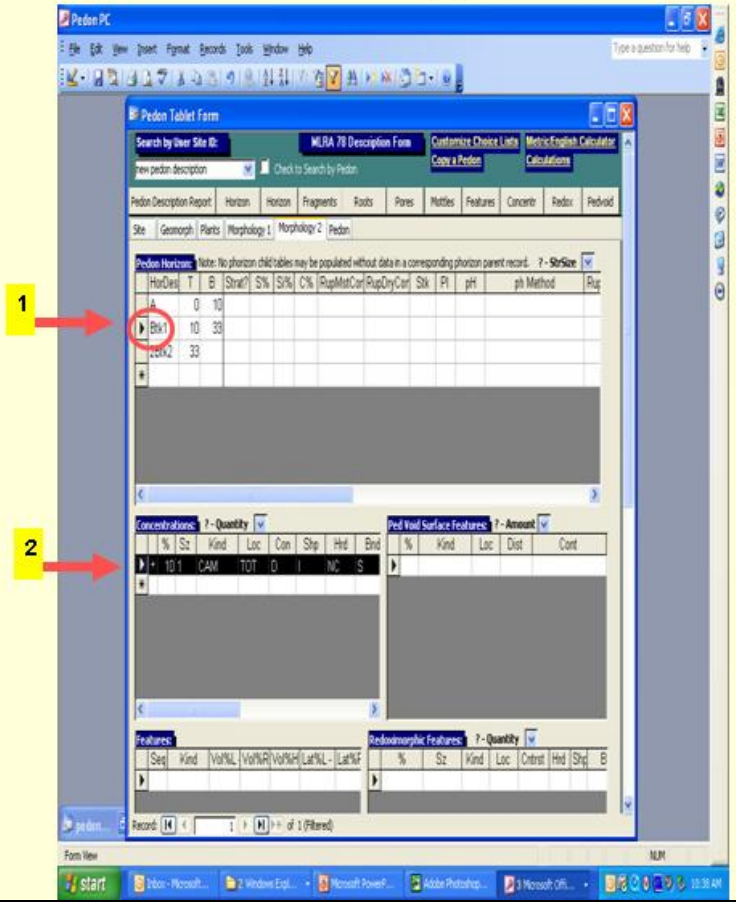
This is the second tab where you record horizon data. There were too many tables to put on one screen so they were separated. The pedon horizon table at the top is an exact duplicate of the one on the 1st tab.



You can have different columns showing on each one though. How that is done is covered in the Module, “Customizing Pedon PC forms”.

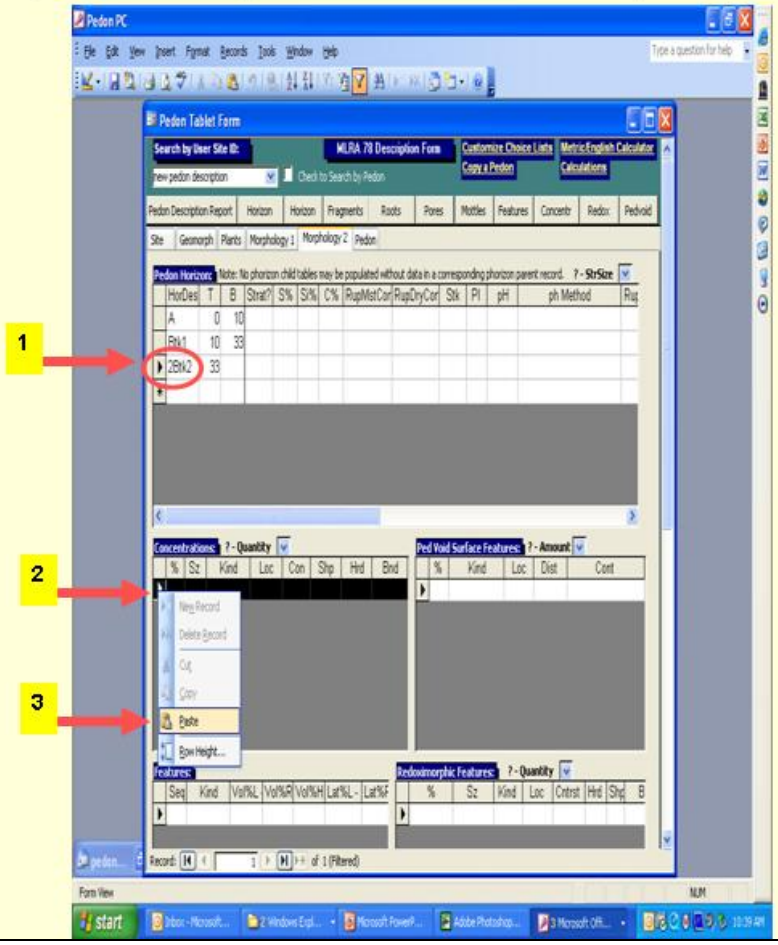
Slide 14

You can speed up population using basic Access functions. Say you have recorded concentrations in one horizon that occur in several horizons but only the percent changes. Make sure you are in the horizon you want to copy from. Highlight the record you want to copy, right click and copy.



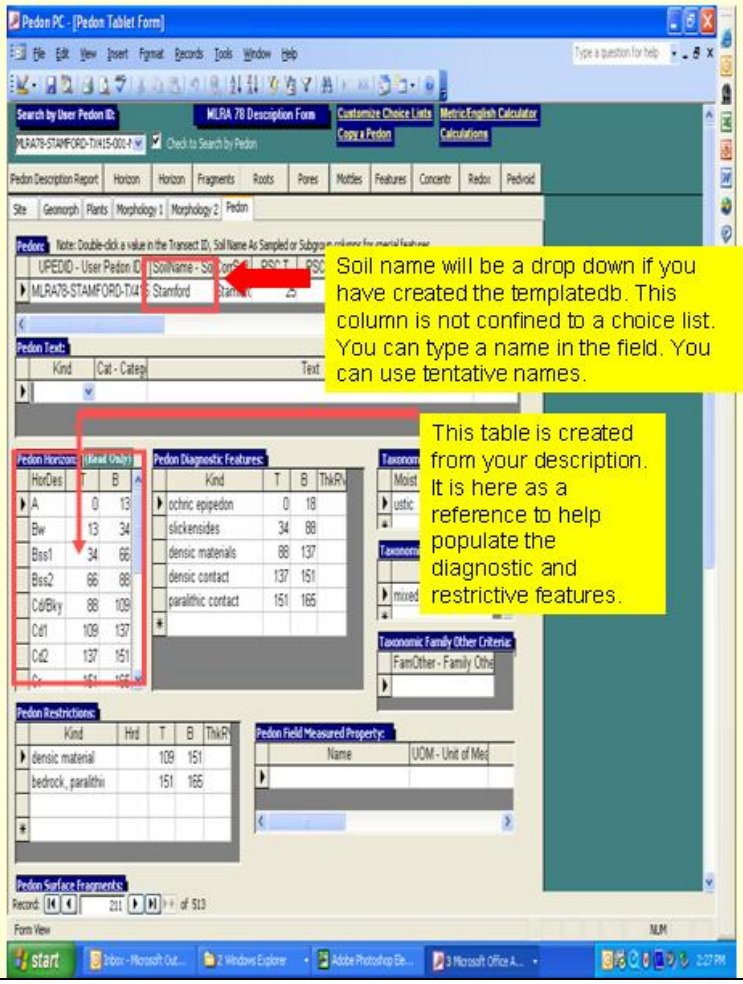
Slide 15

Switch to the horizon you want to paste into. Highlight the empty row, right click and paste. Modify the data as necessary.



Slide 16

This is the pedon tab. This is where you record classification and diagnostic information.

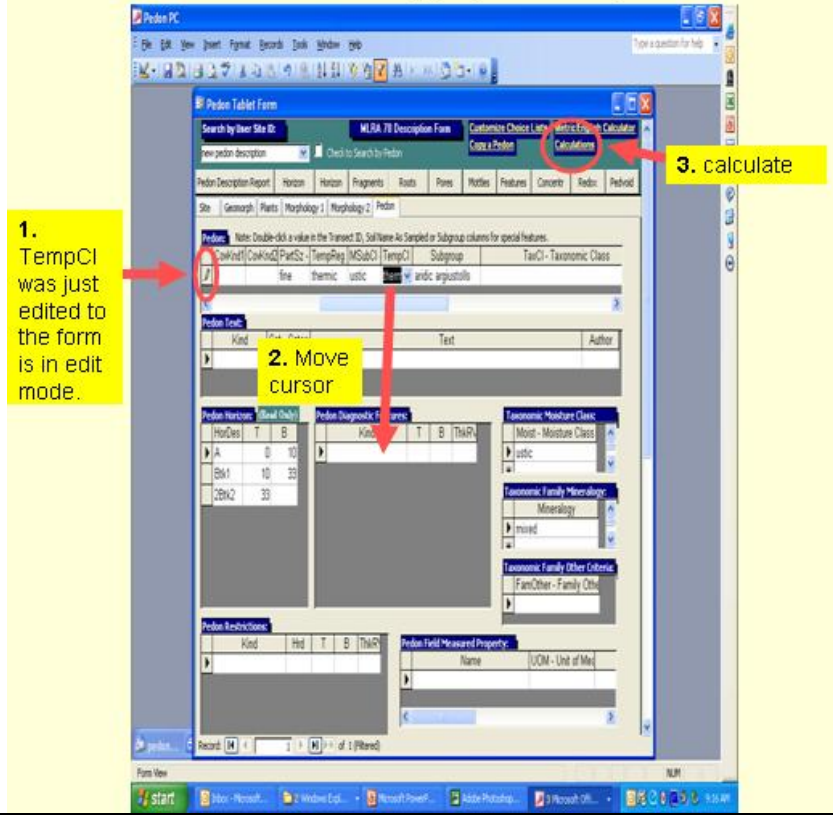


The templatedb.mdb file is obtained from the Soil Data Mart. This is an optional database which will provide a dropdown list of component names if it is present and is linked to in the setup menu. The default location for the templatedb.mdb is c:/pedon and the default name is templatedb.mdb. Directions for downloading and creating the templatedb.mdb are on the Soil Data Mart page.

The horizon table on the Pedon Tab is read only. This is because it is put here for reference only. The data is actually entered on the horizon one and horizon two tabs (morphology tabs in this example).

Slide 17

Calculating classification. The classification calculation will not run if the record is in edit mode. You are in edit mode if a little pencil is showing at the left end of the form. After entering all of the taxonomy data, move your cursor out of the line to another table. The pencil will turn into an arrow. Go to the calculation screen. You only have to populate the sub group column, the great group, sub order and order are automatically populated for you.

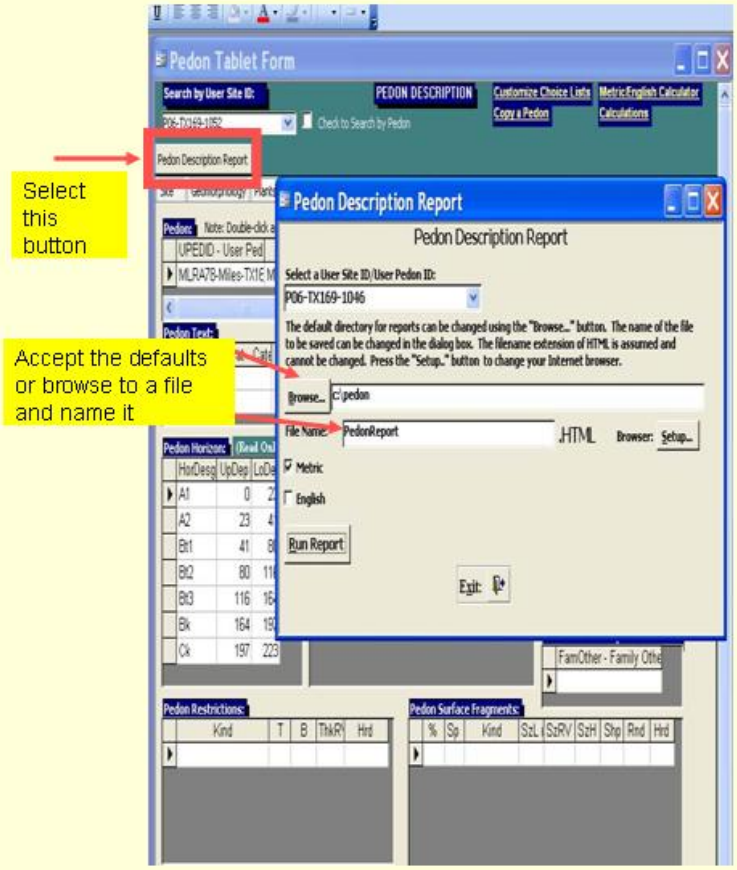


There are four fields in NASIS that are calculated fields. These same four fields can be calculated in Pedon PC. They are the horizon designation, horizon texture, parent material, and taxonomic classification.

The Calculate button opens up the form for performing these four calculations in Pedon PC. It is also possible to upload the data to NASIS and then perform the calculations. However, there are reports in Pedon PC that use the calculated fields. If the calculations are not performed, the profile description report will be missing values for horizon designation and texture for example.

Slide 18

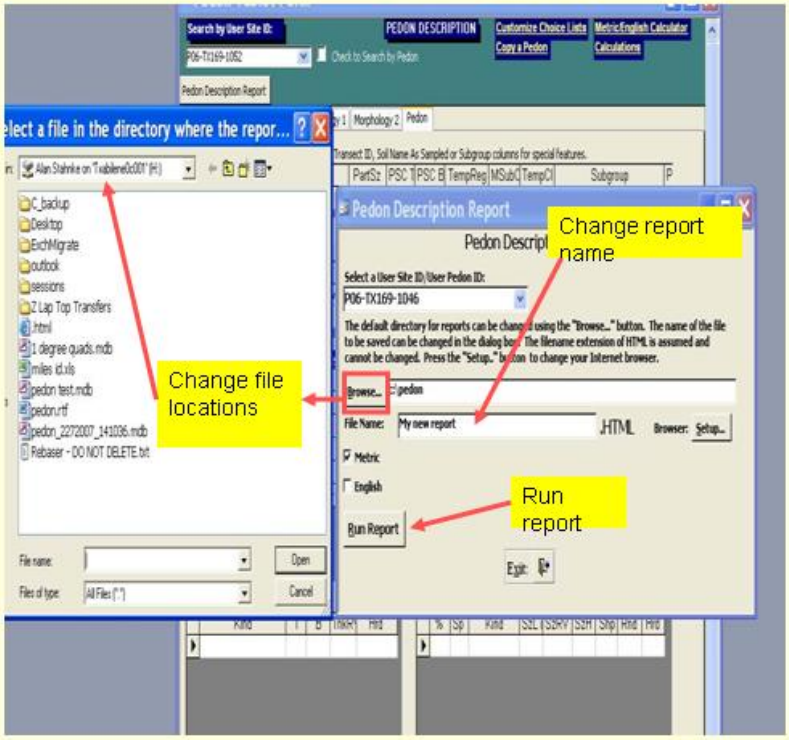
There are a couple of different kind of reports. The Pedon Description Report gives you a report of all data recorded. It can be named and saved for later use.



The official pedon description report is in NASIS. A pedon description report is provided in Pedon PC for users to evaluate the data input and ensure that they have not missed any fields.

Slide 19

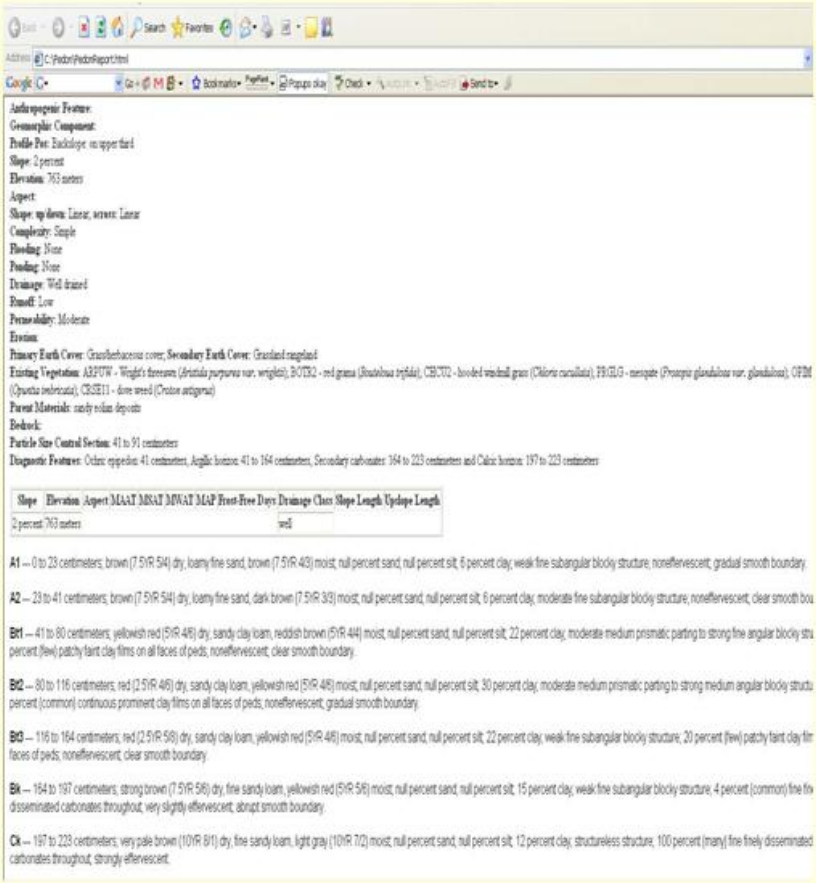
You can select browse to change where the file will be saved and rename it.



Many users just want to view the report and then close out. However, if you wish to save the report, there are options which allow you to do that as well. If you do not rename the file it will be overwritten the next time you run the report.

Slide 20

Gives you a full pedon description report



Anthropogenic Feature:
Geomorphic Component:
Profile Pos: Backslope: no upper third
Slope: 2 percent
Elevation: 763 meters
Aspect:
Shape: up/down: Linear; across: Linear
Complexity: Simple
Flooding: None
Ponding: None
Drainage: Well drained
Runoff: Low
Permeability: Moderate
Erosion:
Primary Earth Cover: Grass/herbaceous cover; **Secondary Earth Cover:** Grassland rangeland
Existing Vegetation: ARPUW - Wright's threeawn (*Aristida purpurea* var. *wrightii*); BOTK2 - red grama (*Bouteloua trifida*); CEHT2 - hooded windmill grass (*Chloris cucullata*); FRGLG - mesquite (*Prosopis glandulosa* var. *glandulosa*); OPIM (*Opuntia imbricata*); CESE11 - dove weed (*Croton setigerus*)
Parent Materials: sandy eolian deposits
Bedrock:
Particle Size Control Section: 41 to 91 centimeters
Diagnostic Features: Ochric epipedon 41 centimeters, Argillic horizon 41 to 164 centimeters, Secondary carbonates 164 to 223 centimeters and Calcic horizon 197 to 223 centimeters

Slope	Elevation	Aspect	MAAT	MSAT	MWAT	MAP	Frost-Free Days	Drainage Class	Slope Length	Upslope Length
2 percent	763 meters							well		

A1 — 0 to 23 centimeters; brown (7.5YR 5/4) dry, loamy fine sand, brown (7.5YR 4/3) moist; null percent sand, null percent silt, 6 percent clay; weak fine subangular blocky structure; noneffervescent; gradual smooth boundary.

A2 — 23 to 41 centimeters; brown (7.5YR 5/4) dry, loamy fine sand, dark brown (7.5YR 3/3) moist; null percent sand, null percent silt, 6 percent clay; moderate fine subangular blocky structure; noneffervescent; clear smooth bou

Bt1 — 41 to 80 centimeters; yellowish red (5YR 4/6) dry, sandy clay loam, reddish brown (5YR 4/4) moist; null percent sand, null percent silt, 22 percent clay; moderate medium prismatic parting to strong fine angular blocky stru percent (few) patchy faint clay films on all faces of peds; noneffervescent; clear smooth boundary.

Bt2 — 80 to 116 centimeters; red (2.5YR 4/6) dry, sandy clay loam, yellowish red (5YR 4/6) moist; null percent sand, null percent silt, 30 percent clay; moderate medium prismatic parting to strong medium angular blocky structu percent (common) continuous prominent clay films on all faces of peds; noneffervescent; gradual smooth boundary.

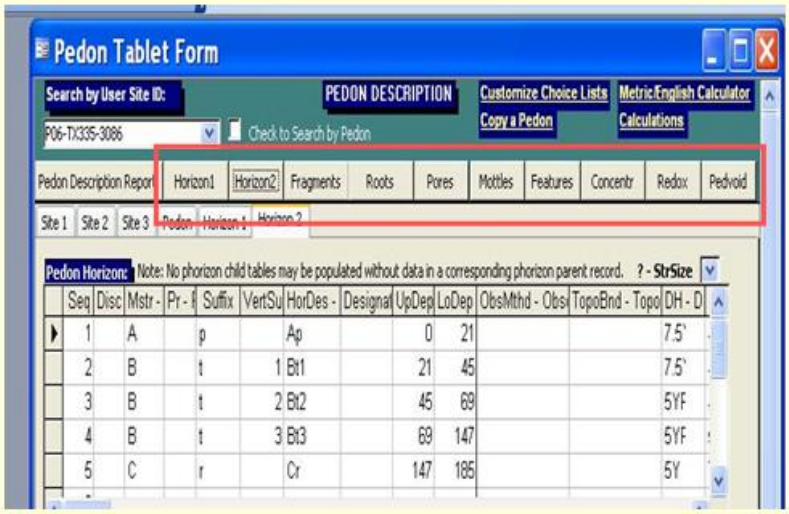
Bt3 — 116 to 164 centimeters; red (2.5YR 5/8) dry, sandy clay loam, yellowish red (5YR 4/6) moist; null percent sand, null percent silt, 22 percent clay; weak fine subangular blocky structure; 20 percent (few) patchy faint clay film faces of peds; noneffervescent; clear smooth boundary.

Bk — 164 to 197 centimeters; strong brown (7.5YR 5/6) dry, fine sandy loam, yellowish red (5YR 5/6) moist; null percent sand, null percent silt, 15 percent clay; weak fine subangular blocky structure; 4 percent (common) fine fin disseminated carbonates throughout; very slightly effervescent; abrupt smooth boundary.

Ck — 197 to 223 centimeters; very pale brown (10YR 8/1) dry, fine sandy loam, light gray (10YR 7/2) moist; null percent sand, null percent silt, 12 percent clay; structureless structure; 100 percent (many) fine finely disseminated carbonates throughout; strongly effervescent.

Slide 21

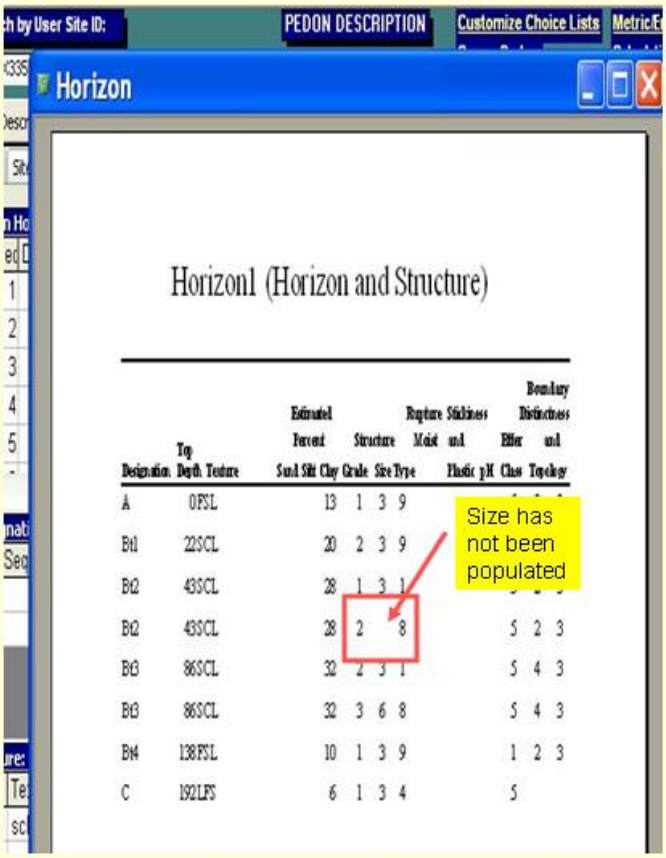
The other reports across the top are called completeness reports. They are for checking the completeness of your data entry for individual tables.



Completeness reports show the coded pedon values. They are useful to make sure you did not miss populating data in a horizon.

Slide 22

Example of a completeness report.



Designation	Top Depth	Texture	Estimated Percent Sand	Silt	Clay	Structure Grade	Size	Type	Rupture Moist	Stickiness and Plastic	pH	Effer	Boundary Distinctness and Topology
A	0	FSL	13			1	3	9					
Bt1	22	SCL	20			2	3	9					
Bt2	43	SCL	28			1	3	1					
Bt2	43	SCL	28			2		8			5	2	3
Bt3	86	SCL	32			2	3	1			5	4	3
Bt3	86	SCL	32			3	6	8			5	4	3
Bt4	138	FSL	10			1	3	9			1	2	3
C	192	LFS	6			1	3	4			5		

In the structure columns it just gives the pedon codes for structure but by looking at the report it is possible to see that the structure size for one of the horizons was not populated.