Labeling "Chemboxes" in ArcGIS

Automating Sampling Data Labels



Problem

- We needed constantly updated maps of groundwater well sampling results.
- The need for maps showing one year of data or three years of data.
- Not too many examples of this on the Internet.

Solution

• Automate labeling using VBScript Expression

Benefits of Scripting

- Easy to update data on the map
- Time frame of data shown can easily be changed
- Results above an action level can be shown in bold to stand out.
- Avoid typos and incorrect data. Data errors can be blamed on the lab.
- Data is presented uniformly.

One Year sample of Data



Three years of sample data



Process

Flatten data tables (data from Lab or data validation) Join data to shapefile containing sample locations

Write VBScript Expression

Flatten data tables

- Pivot Table in Excel
- Or build a query to output a flattened table in Microsoft Access
- Also know as denormalizing a database

This makes it easier to join your Sample/Well Locations to your sample data.

Allows for simple access to data for scripting labels in ArcGIS.

No need for data arrays or FOR NEXT programming Loops.

Create One to Many Relationship

Sample_ID	Sample_Date	Result
35 Lowell Rd	11/1/11	0.035
39 Lowell Rd	11/1/11	< 0.05
100 Lowell Rd	11/1/11	< 0.05
35 Lowell Rd	10/1/11	0.055
100 Lowell Rd	10/1/11	0.025

One Location to many results.

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Building a VBScript Expression

Layer Properties General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates Time HTML Image: Class of the stures in this layer Method: Define classes of features and label each class differently. Class: Default Image: Class of the stures in this class Add Define Classes	Popup Label Expression
Text String Expression> Text Symbol Expression> Text Symbol Image: B I I Symbol Other Options Pre-defined Label Style Placement Properties Scale Range	Expression Fields Double-click to add a field into the expression Perchlorate_Monitoring_Locations.OBJECTID Perchlorate_Monitoring_Locations.PARID Perchlorate_Monitoring_Locations.COATION Perchlorate_Monitoring_Locations.SMPL_TYPE Perchlorate_Monitoring_Locations.COMMENT * * Merchlorate_Monitoring_Locations.COMMENT * * Merchlorate_Monitoring_Locations.COMMENT * * Monitoring_Locations.COMMENT * <t< th=""></t<>
OK Cancel	Expression Write a function named FindLabel for the selected parter. Add fields as parameters to the function. Function FindLabel ([Perchlorate_Monitoring_Locations.LOCATION], [Perc Dim w w = 2 bold="<_BOL>" unbold = "<_BOL>" Umit in Str([Res_results2.N2009_01], "<") Then < III Verify Reset Help Load Save Parser: VBScript OK Cancel

The Script

Sample_Monitoring_Locations shapefile joined with Res_Results2 (lab results) Table.



One routine per month

```
If InStr([Res_results.N2009_01], "<") Then

[Res_results2.N2009_01] = Replace([Res_results2.N2009_01], "<", "&It;")

Else

[Res_results2.N2009_01] = [Res_results2.N2009_01]
```

If the string contains < "less than" swap it out with an equivalent character code.

```
If IsNumeric(trim([Res_results2.N2009_01])) Then
    If cint(trim([Res_results2.N2009_01])) > w Then
    bold = "<BOL>"
    End if
End if
```

```
If trim([Res_results2.N2009_01]) <> "" Then
```

End If

```
Parse number from
String. If greater
than MCL then Bold.
```

If results are not null then include label. Trim removes blank spaces.

TheLabel = TheLabel & vbnewline & bold & [Res_results2.N2009_01] & " (1/09)" & unbold End if

This routine is repeated for every month of data Changing the date/Column name of course

End the function and replace '&'

TheLabel =

Replace([sample_Monitoring_Locations.WC_Loc ation], "&", "&") & TheLabel

FindLabel = TheLabel End Function

Displaying < > and & Symbols Using Equivalent Character Codes

ESRI Desktop Help mentions this work around:

Function FindLabel ([LABELFIELD]) NewString = Replace([LABELFIELD],"&","&") FindLabel = "<ITA>" & NewString & "</ITA>" End Function

I used this work around:

If InStr([Res_results.N2009_01], "<") Then
 [Res_results2.N2009_01] = Replace([Res_results2.N2009_01], "<", "&It;")
TheLabel =
Replace([sample_Monitoring_Locations.WC_Location], "&", "&") &
TheLabel</pre>

Balance text size to avoid overlap



Resources

- "Using VBSript to Build Complex Labels in ArcGIS" Arcuser Magazine, Oct-Dec 2004 (deals mostly with text formatting)
- ESRI Help on building Label expressions
- "Advanced Labeling in ArcMap with VBScript Findlabel Functions" by Chad Cooper
- Note: Maplex was used mainly to stack label location name.

Table		-																-	
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