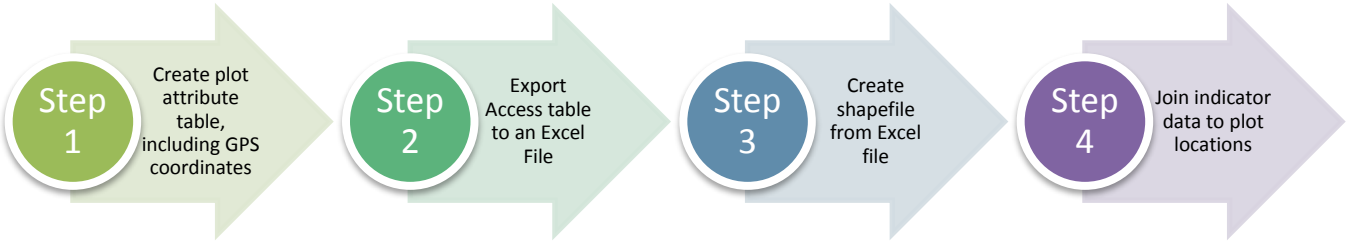
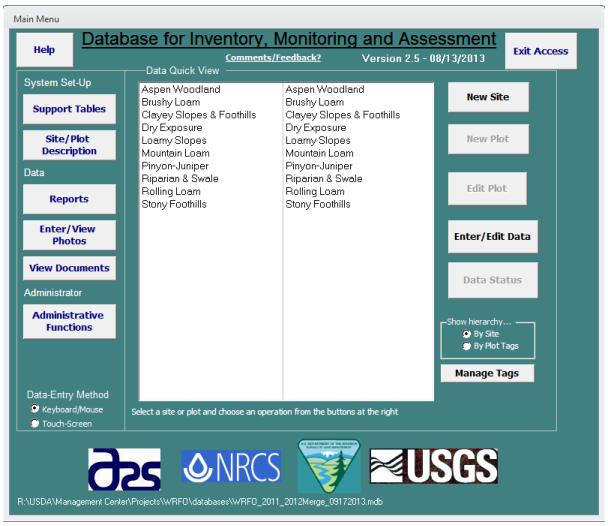
Creating an Attributed Shapefile from DIMA

This tutorial describes the process of extracting data from DIMA into a point shapefile. The process assumes that you know how to run a data report (see the AIM Data Reporting Doc). This tutorial also uses Access queries, Excel pivot tables, and ArcGIS joins. Other resources may be necessary if you are uncertain of how to use these programs.

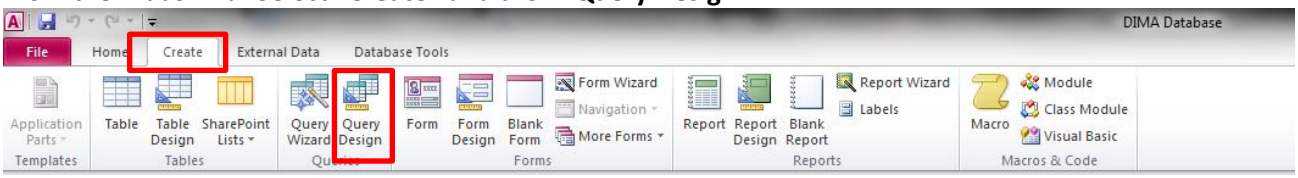


Step 1: Run a Custom Query in DIMA

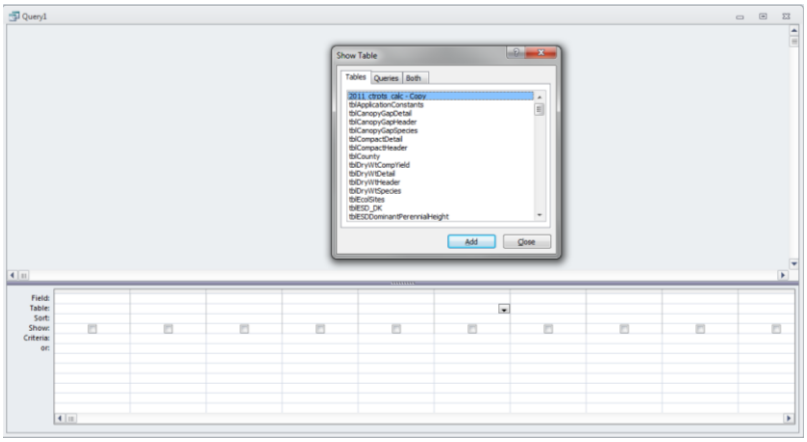


First, make a back-up from DIMA.

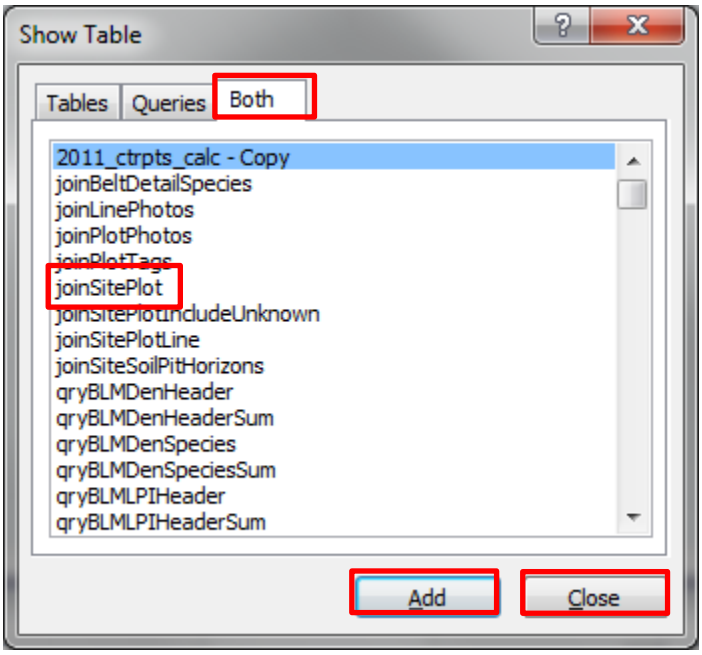
From the Ribbon Bar Select **"Create"** and then **"Query Design"**



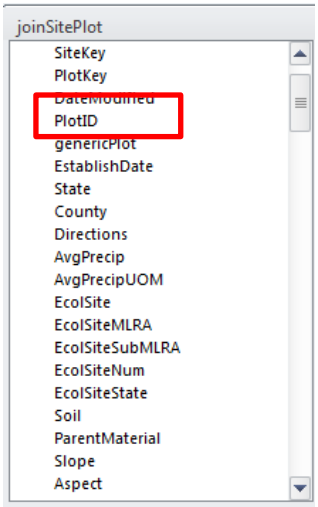
The new query window will pop up with the “Show Table”



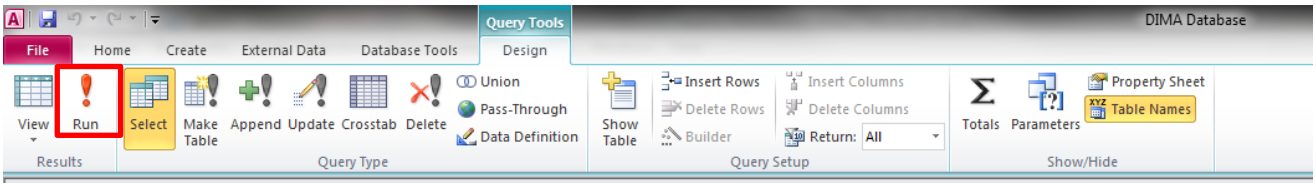
Select **Both** from the show table and select the **joinSitePlot, Add,** and then **Close**.



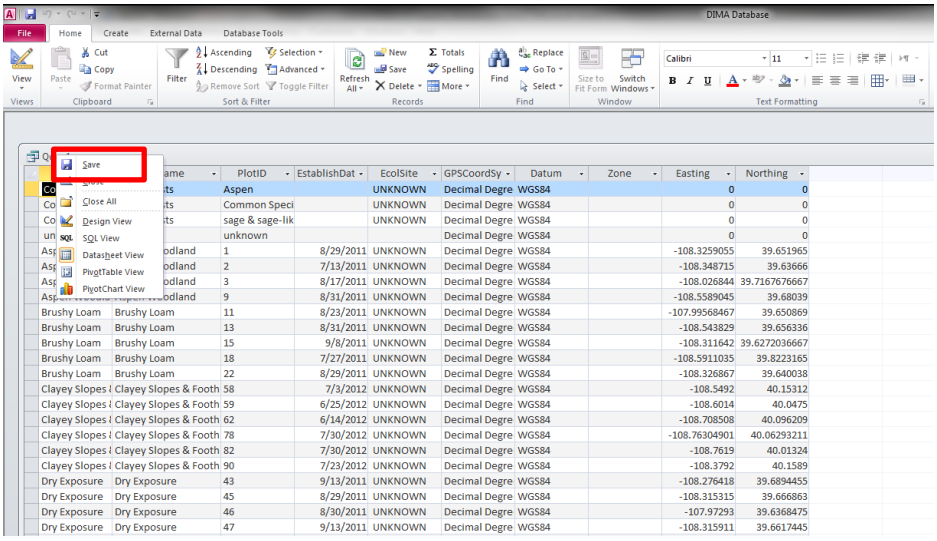
The joinSitePlot window will be accessible with a list of the fields in this table. Double click on **SiteID, SiteKey, PlotID, EstablishDate, EcolSite, GPSCoordSys, Datum, Zone, Easting, Northing.** You will notice that these fields are added to the table at the bottom of the query window.



Select **Run** from the Access ribbon



At table containing the fields you have selected will pop up. Review the table to ensure that the data are correct.

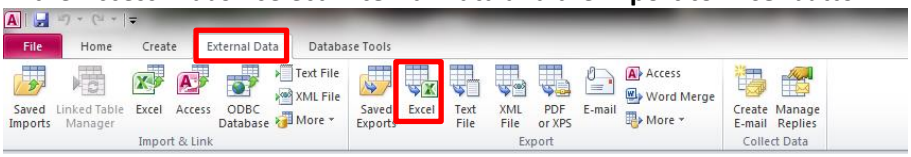


		PlotID	EstablishDat	EcolSite	GPSCoordSy	Datum	Zone	Easting	Northing
		Aspen		UNKNOWN	Decimal Degre	WGS84		0	0
		Common Speci		UNKNOWN	Decimal Degre	WGS84		0	0
		sage & sage-lik		UNKNOWN	Decimal Degre	WGS84		0	0
		unknown			Decimal Degre	WGS84		0	0
	odland	1	8/29/2011	UNKNOWN	Decimal Degre	WGS84		-108.3259055	39.651965
	odland	2	7/13/2011	UNKNOWN	Decimal Degre	WGS84		-108.348715	39.63666
	odland	3	8/17/2011	UNKNOWN	Decimal Degre	WGS84		-108.026844	39.7167676667
	odland	9	8/31/2011	UNKNOWN	Decimal Degre	WGS84		-108.5589045	39.68039
Brushy Loam	Brushy Loam	11	8/23/2011	UNKNOWN	Decimal Degre	WGS84		-107.99568467	39.650869
Brushy Loam	Brushy Loam	13	8/31/2011	UNKNOWN	Decimal Degre	WGS84		-108.543829	39.656336
Brushy Loam	Brushy Loam	15	9/8/2011	UNKNOWN	Decimal Degre	WGS84		-108.311642	39.6272036667
Brushy Loam	Brushy Loam	18	7/27/2011	UNKNOWN	Decimal Degre	WGS84		-108.5911035	39.8223165
Brushy Loam	Brushy Loam	22	8/29/2011	UNKNOWN	Decimal Degre	WGS84		-108.326867	39.640038
Clayey Slopes &	Clayey Slopes & Footh	58	7/3/2012	UNKNOWN	Decimal Degre	WGS84		-108.5492	40.15312
Clayey Slopes &	Clayey Slopes & Footh	59	6/25/2012	UNKNOWN	Decimal Degre	WGS84		-108.6014	40.0475
Clayey Slopes &	Clayey Slopes & Footh	62	6/14/2012	UNKNOWN	Decimal Degre	WGS84		-108.708508	40.096209
Clayey Slopes &	Clayey Slopes & Footh	78	7/30/2012	UNKNOWN	Decimal Degre	WGS84		-108.76304901	40.06293211
Clayey Slopes &	Clayey Slopes & Footh	82	7/30/2012	UNKNOWN	Decimal Degre	WGS84		-108.7619	40.01324
Clayey Slopes &	Clayey Slopes & Footh	90	7/23/2012	UNKNOWN	Decimal Degre	WGS84		-108.3792	40.1589
Dry Exposure	Dry Exposure	43	9/13/2011	UNKNOWN	Decimal Degre	WGS84		-108.276418	39.6894455
Dry Exposure	Dry Exposure	45	8/29/2011	UNKNOWN	Decimal Degre	WGS84		-108.315315	39.666863
Dry Exposure	Dry Exposure	46	8/30/2011	UNKNOWN	Decimal Degre	WGS84		-107.97293	39.6368475
Dry Exposure	Dry Exposure	47	9/13/2011	UNKNOWN	Decimal Degre	WGS84		-108.315911	39.6617445

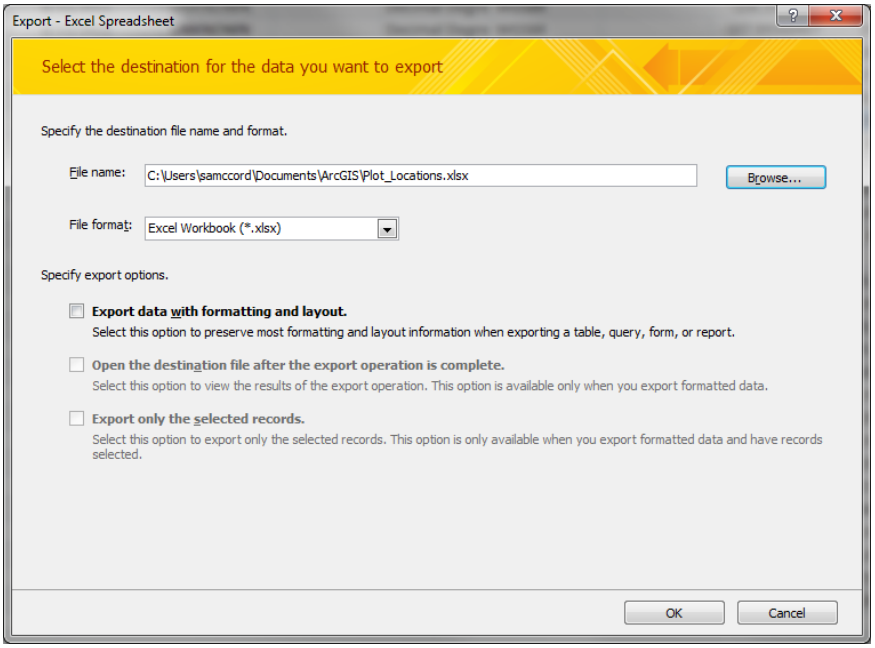
Right click on the Query Header, select **Save** and title it AA_Plot_Locations. This will distinguish the table from the standard DIMA table set.

Step 2. Export the Access table to an Excel File.

In the Access Ribbon select **External Data** and the **Export to Excel** button.

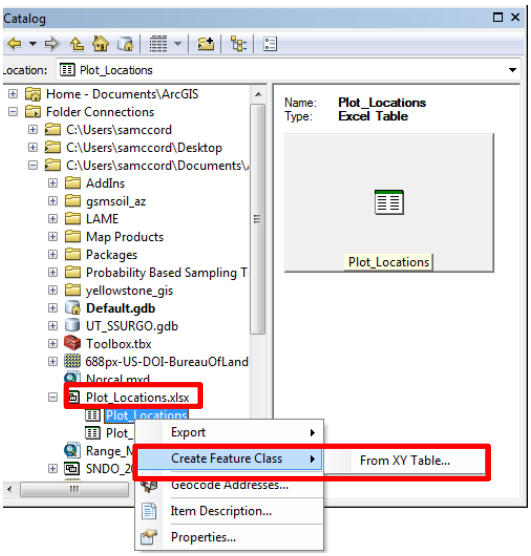


Select the Location and file name for the plot table. In this exercise “Plot_Locations” was selected as the Excel file name.

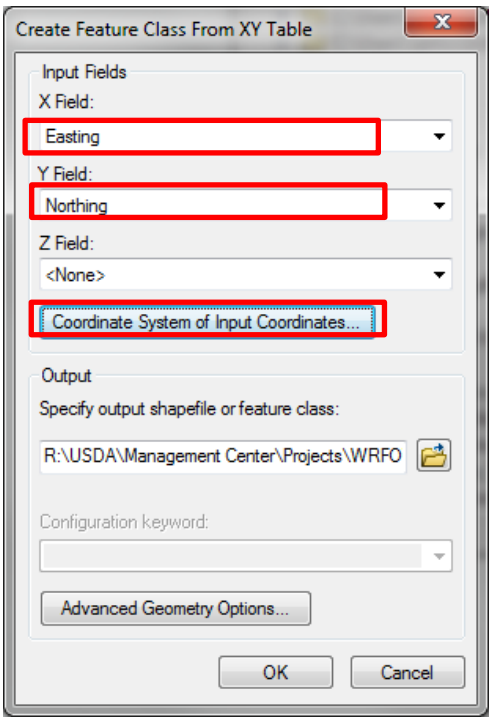


Step 3: Convert the Plot Table into a shapefile
Open ArcCatalog
In ArcCatalog navigate to the location where the Plot_Location table is stored.

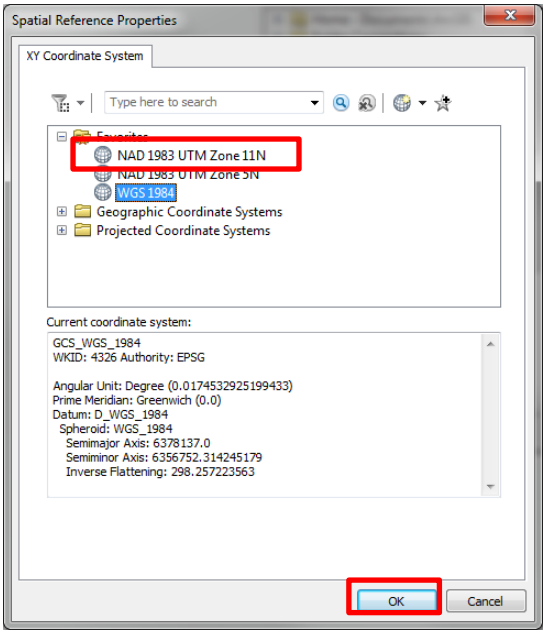
Select the **plot_locations workbook** and right click on the **AA_plot_location worksheet.** Select **Create Feature Class** and **From XY Table**.



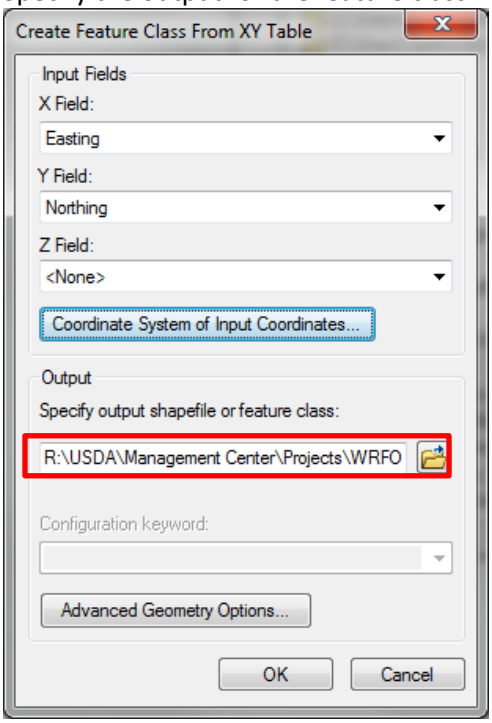
Select "**Easting**" as the X field, "**Northing**" as the Y field. Select the **Coordinate System of Input Coordinates** button.



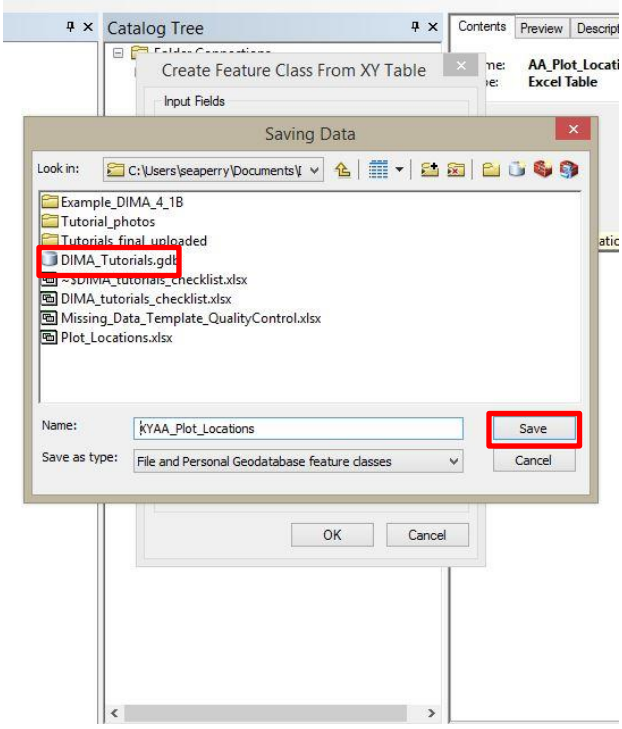
Select the coordinate system recorded for the coordinates in DIMA. If more than one coordinate system/datum is recorded for the plot set you are working with, you will need to treat those at two separate groups of points.



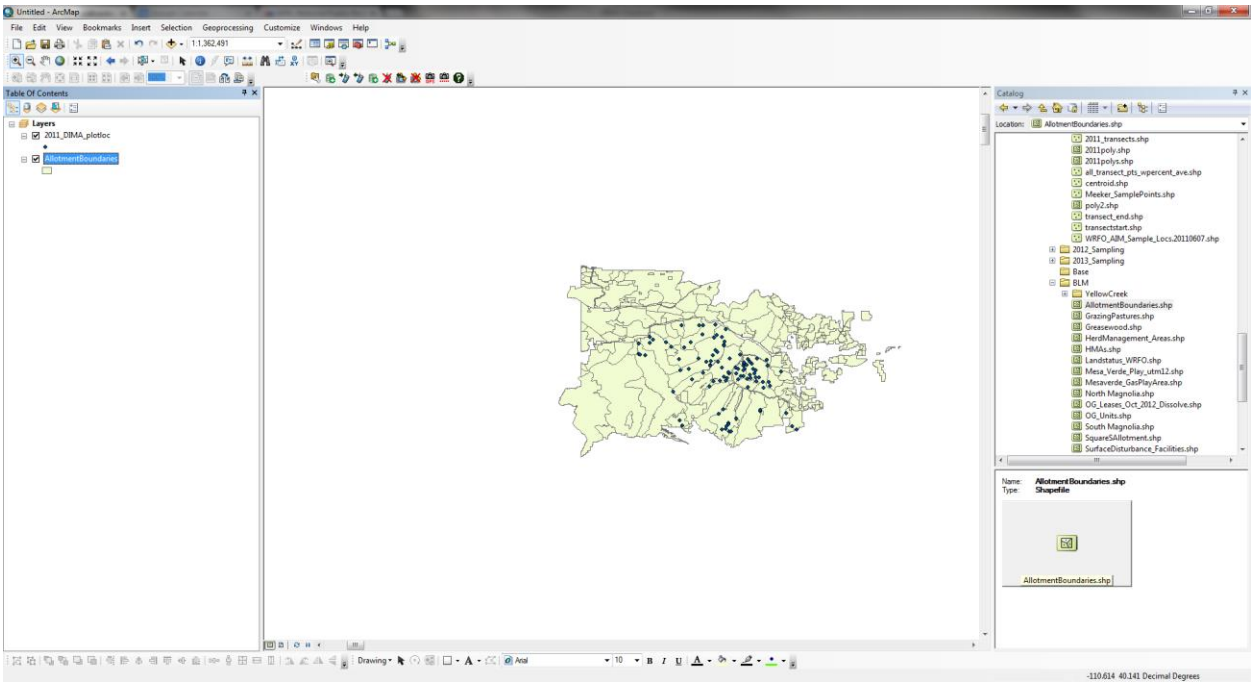
Specify the output for the feature class



Make sure you save the feature class in a geodatabase, otherwise you will get an error message whenever you try to save the feature class.

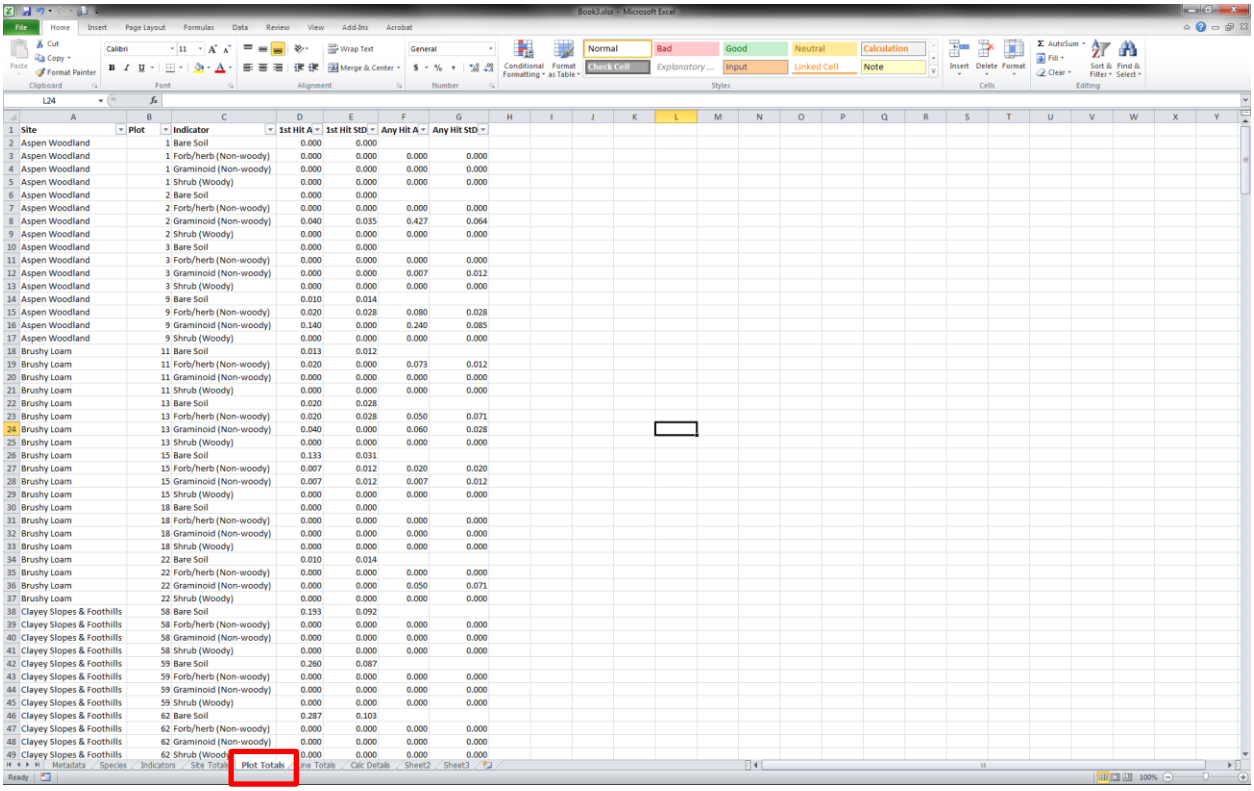


Select **Ok**.
Open ArcMap
Add the new feature class to your map. Check the layer to make sure the plots are located in the correct location.



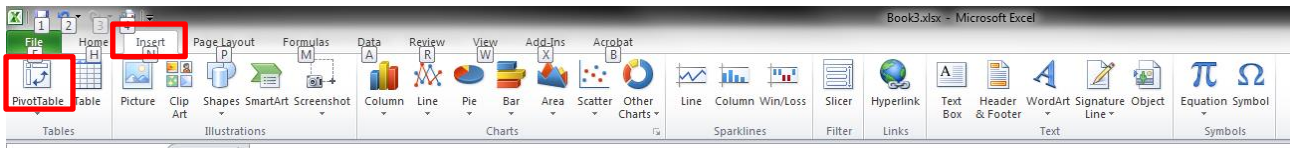
Step 4. Join indicator data to the plot location.

Open the Excel workbook saved from running a DIMA report. Select the **Plot Totals** tab



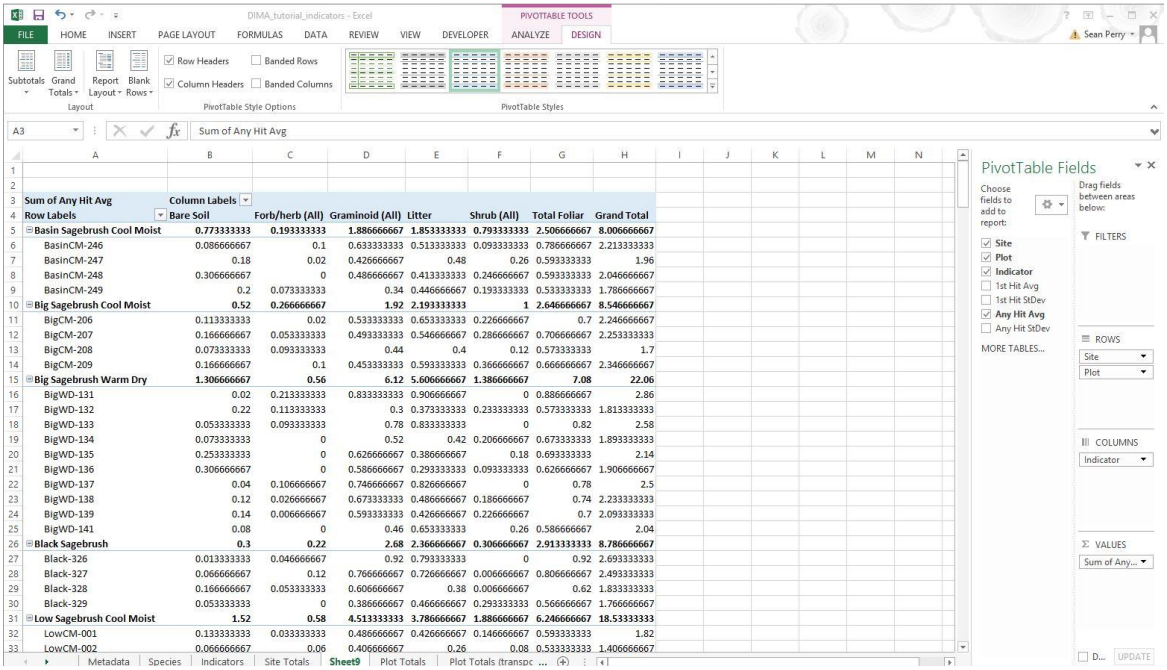
Site	Plot	Indicator	1st Hit A	1st Hit StD	Any Hit A	Any Hit StD
Aspen Woodland	1	Bare Soil	0.000	0.000		
Aspen Woodland	1	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Aspen Woodland	1	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Aspen Woodland	1	Shrub (Woody)	0.000	0.000	0.000	0.000
Aspen Woodland	2	Bare Soil	0.000	0.000		
Aspen Woodland	2	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Aspen Woodland	2	Graminoid (Non-woody)	0.040	0.035	0.427	0.064
Aspen Woodland	2	Shrub (Woody)	0.000	0.000	0.000	0.000
Aspen Woodland	3	Bare Soil	0.000	0.000		
Aspen Woodland	3	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Aspen Woodland	3	Graminoid (Non-woody)	0.000	0.000	0.007	0.012
Aspen Woodland	3	Shrub (Woody)	0.000	0.000	0.000	0.000
Aspen Woodland	9	Bare Soil	0.010	0.014		
Aspen Woodland	9	Forb/herb (Non-woody)	0.020	0.028	0.080	0.028
Aspen Woodland	9	Graminoid (Non-woody)	0.140	0.000	0.240	0.085
Aspen Woodland	9	Shrub (Woody)	0.000	0.000	0.000	0.000
Brushy Loam	11	Bare Soil	0.013	0.012		
Brushy Loam	11	Forb/herb (Non-woody)	0.020	0.000	0.073	0.012
Brushy Loam	11	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Brushy Loam	11	Shrub (Woody)	0.000	0.000	0.000	0.000
Brushy Loam	13	Bare Soil	0.020	0.028		
Brushy Loam	13	Forb/herb (Non-woody)	0.020	0.028	0.050	0.071
Brushy Loam	13	Graminoid (Non-woody)	0.040	0.000	0.060	0.028
Brushy Loam	13	Shrub (Woody)	0.000	0.000	0.000	0.000
Brushy Loam	15	Bare Soil	0.133	0.031		
Brushy Loam	15	Forb/herb (Non-woody)	0.007	0.012	0.020	0.020
Brushy Loam	15	Graminoid (Non-woody)	0.007	0.012	0.007	0.012
Brushy Loam	15	Shrub (Woody)	0.000	0.000	0.000	0.000
Brushy Loam	18	Bare Soil	0.000	0.000		
Brushy Loam	18	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Brushy Loam	18	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Brushy Loam	18	Shrub (Woody)	0.000	0.000	0.000	0.000
Brushy Loam	22	Bare Soil	0.010	0.014		
Brushy Loam	22	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Brushy Loam	22	Graminoid (Non-woody)	0.000	0.000	0.050	0.071
Brushy Loam	22	Shrub (Woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	58	Bare Soil	0.133	0.092		
Clayey Slopes & Foothills	58	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	58	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	58	Shrub (Woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	59	Bare Soil	0.260	0.087		
Clayey Slopes & Foothills	59	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	59	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	59	Shrub (Woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	62	Bare Soil	0.287	0.103		
Clayey Slopes & Foothills	62	Forb/herb (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	62	Graminoid (Non-woody)	0.000	0.000	0.000	0.000
Clayey Slopes & Foothills	62	Shrub (Woody)	0.000	0.000	0.000	0.000

Select all. In the Excel ribbon select **Insert** and then **Pivot Table**



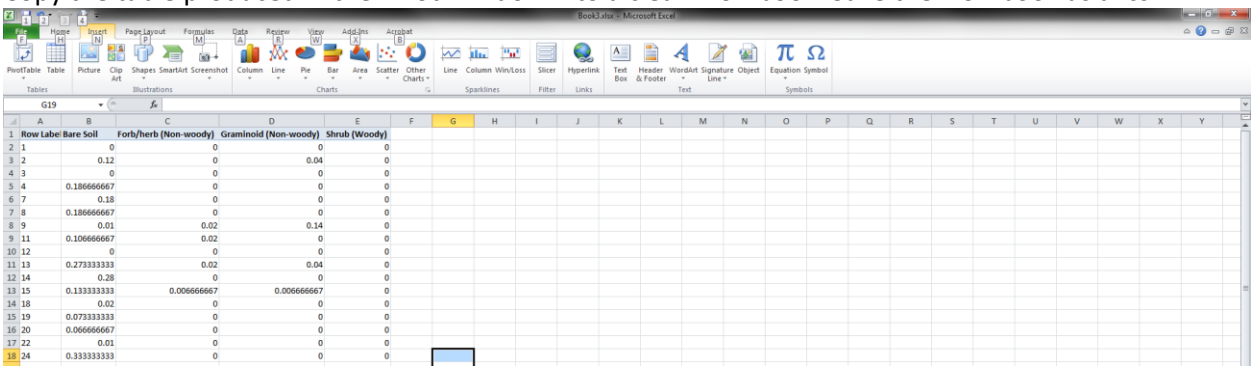
Set up the Pivot Table as shown below. The Indicators are placed in the Column Labels and the PlotID are put in the Row Labels box. Be sure to change the “Grand Total” function to “Sum” or “Max” rather than count by right clicking on “Grand Total”→Summarize Values By→ Sum or Max.

To change the indicators to columns, right click on any indicator→Move→Move “Indicator” to Columns



Sum of Any Hit Avg	Column Labels							
Row Labels	Bare Soil	Forb/herb (All)	Graminoid (All)	Litter	Shrub (All)	Total Foliar	Grand Total
Basin Sagebrush Cool Moist	**0.773333333**	**0.193333333**	**1.886666667**	**1.853333333**	**0.793333333**	**2.506666667**	**8.006666667**
BasinCM-246	0.086666667	0.1	0.633333333	0.513333333	0.093333333	0.786666667	2.213333333
BasinCM-247	0.18	0.02	0.426666667	0.48	0.26	0.593333333	1.96
BasinCM-248	0.306666667	0	0.486666667	0.413333333	0.246666667	0.593333333	2.046666667
BasinCM-249	0.2	0.073333333	0.34	0.446666667	0.193333333	0.533333333	1.786666667
Big Sagebrush Cool Moist	**0.52**	**0.266666667**	**1.92**	**2.193333333**	**1**	**2.646666667**	**8.546666667**
BigCM-206	0.113333333	0.02	0.533333333	0.653333333	0.226666667	0.7	2.246666667
BigCM-207	0.166666667	0.053333333	0.493333333	0.546666667	0.286666667	0.706666667	2.253333333
BigCM-208	0.073333333	0.093333333	0.44	0.4	0.12	0.573333333	1.7
BigCM-209	0.166666667	0.1	0.453333333	0.593333333	0.366666667	0.666666667	2.346666667
Big Sagebrush Warm Dry	**1.306666667**	**0.56**	**6.12**	**5.606666667**	**1.386666667**	**7.08**	**22.06**
BigWD-131	0.02	0.213333333	0.833333333	0.906666667	0	0.886666667	2.86
BigWD-132	0.22	0.113333333	0.3	0.373333333	0.233333333	0.573333333	1.813333333
BigWD-133	0.053333333	0.093333333	0.78	0.833333333	0	0.82	2.58
BigWD-134	0.073333333	0	0.52	0.42	0.206666667	0.673333333	1.893333333
BigWD-135	0.253333333	0	0.626666667	0.386666667	0.18	0.693333333	2.14
BigWD-136	0.306666667	0	0.586666667	0.293333333	0.093333333	0.626666667	1.906666667
BigWD-137	0.04	0.106666667	0.746666667	0.826666667	0	0.78	2.5
BigWD-138	0.12	0.026666667	0.673333333	0.486666667	0.186666667	0.74	2.233333333
BigWD-139	0.14	0.006666667	0.593333333	0.426666667	0.226666667	0.7	2.093333333
BigWD-141	0.08	0	0.46	0.653333333	0.26	0.586666667	2.04
Black Sagebrush	**0.3**	**0.22**	**2.68**	**2.366666667**	**0.306666667**	**2.913333333**	**8.786666667**
Black-326	0.013333333	0.046666667	0.92	0.793333333	0	0.92	2.693333333
Black-327	0.066666667	0.12	0.766666667	0.726666667	0.006666667	0.806666667	2.493333333
Black-328	0.166666667	0.053333333	0.606666667	0.38	0.006666667	0.62	1.833333333
Black-329	0.053333333	0	0.386666667	0.466666667	0.293333333	0.566666667	1.766666667
Low Sagebrush Cool Moist	**1.52**	**0.58**	**4.513333333**	**3.786666667**	**1.886666667**	**6.246666667**	**18.53333333**
LowCM-001	0.133333333	0.033333333	0.486666667	0.426666667	0.146666667	0.593333333	1.82
LowCM-002	0.066666667	0.06	0.406666667	0.26	0.08	0.533333333	1.406666667

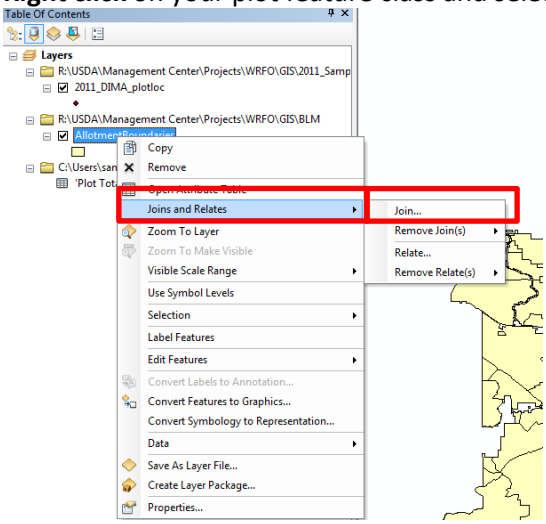
Copy the table produced in the Pivot Window into a clean workbook. Save the workbook as a .csv.



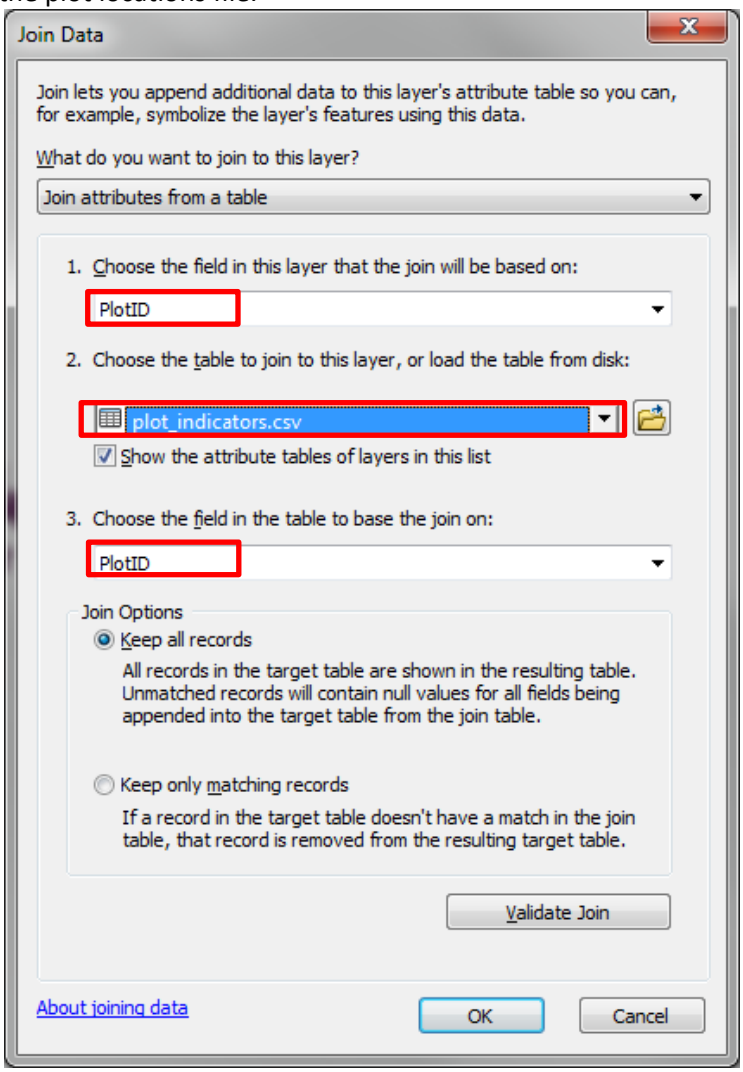
Row Labels	Bare Soil	Forb/herb (Non-woody)	Graminoid (Non-woody)	Shrub (Woody)
1	0	0	0	0
2	0.12	0	0.04	0
3	0	0	0	0
4	0.186666667	0	0	0
7	0.18	0	0	0
8	0.186666667	0	0	0
9	0.01	0.02	0.14	0
11	0.106666667	0.02	0	0
12	0	0	0	0
13	0.273333333	0.02	0.04	0
14	0.28	0	0	0
15	0.133333333	0.006666667	0.006666667	0
18	0.02	0	0	0
19	0.073333333	0	0	0
20	0.066666667	0	0	0
22	0.01	0	0	0
24	0.333333333	0	0	0

Add the new .csv file to your ArcMap project.

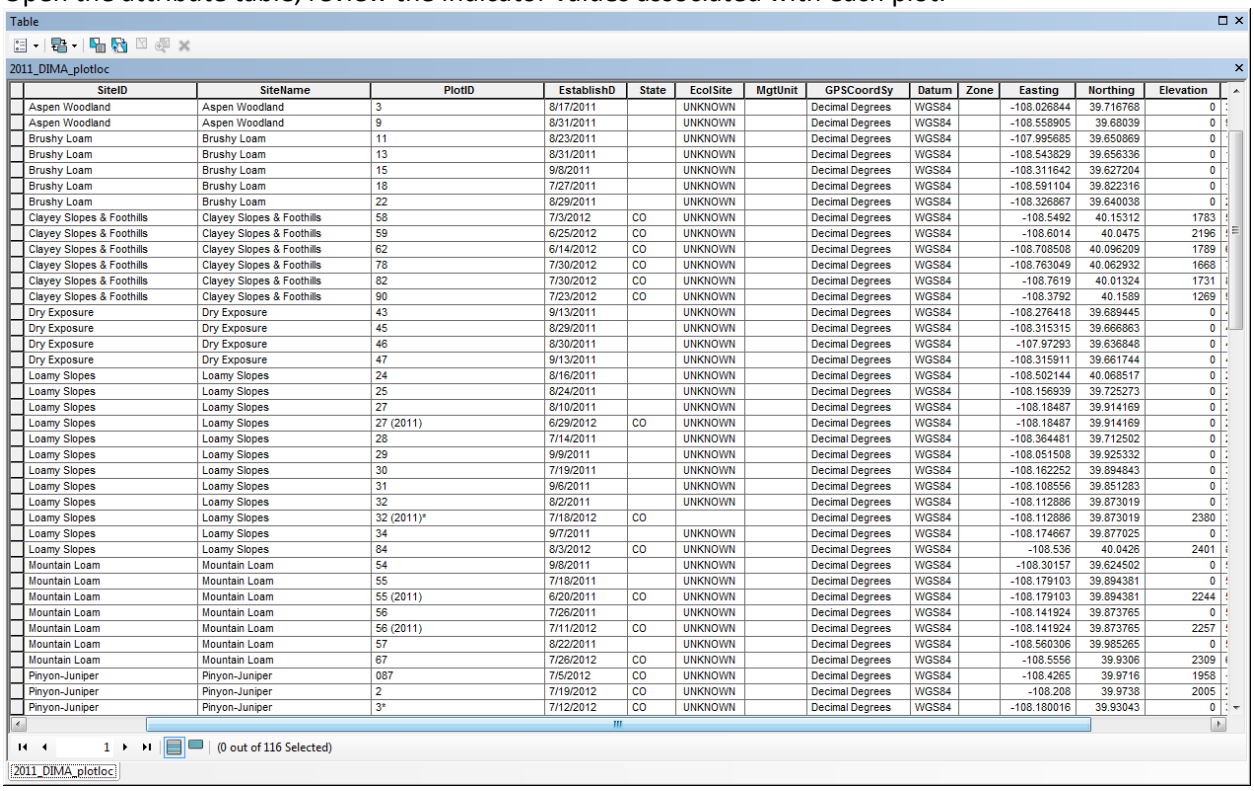
Right click on your plot feature class and select **Joins and Relates** and then **Join**



Select **PlotID** as the join field for both attribute tables, and the plot indicator.csv as your table to join to the plot locations file.



Open the attribute table, review the indicator values associated with each plot.



Table

2011_DIMA_plotloc

SiteID	SiteName	PlotID	EstablishD	State	EcolSite	MgtUnit	GPSCoordSy	Datum	Zone	Easting	Northing	Elevation
Aspen Woodland	Aspen Woodland	3	8/17/2011		UNKNOWN		Decimal Degrees	WGS84		-108.026844	39.716768	0
Aspen Woodland	Aspen Woodland	9	8/31/2011		UNKNOWN		Decimal Degrees	WGS84		-108.558905	39.68039	0
Brushy Loam	Brushy Loam	11	8/23/2011		UNKNOWN		Decimal Degrees	WGS84		-107.995685	39.650869	0
Brushy Loam	Brushy Loam	13	8/31/2011		UNKNOWN		Decimal Degrees	WGS84		-108.543829	39.656336	0
Brushy Loam	Brushy Loam	15	9/8/2011		UNKNOWN		Decimal Degrees	WGS84		-108.311642	39.627204	0
Brushy Loam	Brushy Loam	18	7/27/2011		UNKNOWN		Decimal Degrees	WGS84		-108.591104	39.822316	0
Brushy Loam	Brushy Loam	22	8/29/2011		UNKNOWN		Decimal Degrees	WGS84		-108.326867	39.640038	0
Clayey Slopes & Foothills	Clayey Slopes & Foothills	58	7/3/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.5492	40.15312	1783
Clayey Slopes & Foothills	Clayey Slopes & Foothills	59	6/25/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.6014	40.0475	2196
Clayey Slopes & Foothills	Clayey Slopes & Foothills	62	6/14/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.708508	40.096209	1789
Clayey Slopes & Foothills	Clayey Slopes & Foothills	78	7/30/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.763049	40.062932	1668
Clayey Slopes & Foothills	Clayey Slopes & Foothills	82	7/30/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.7619	40.01324	1731
Clayey Slopes & Foothills	Clayey Slopes & Foothills	90	7/23/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.3792	40.1589	1269
Dry Exposure	Dry Exposure	43	9/13/2011		UNKNOWN		Decimal Degrees	WGS84		-108.276418	39.689445	0
Dry Exposure	Dry Exposure	45	8/29/2011		UNKNOWN		Decimal Degrees	WGS84		-108.315315	39.666863	0
Dry Exposure	Dry Exposure	46	8/30/2011		UNKNOWN		Decimal Degrees	WGS84		-107.97293	39.636848	0
Dry Exposure	Dry Exposure	47	9/13/2011		UNKNOWN		Decimal Degrees	WGS84		-108.315911	39.661744	0
Loamy Slopes	Loamy Slopes	24	8/16/2011		UNKNOWN		Decimal Degrees	WGS84		-108.502144	40.068517	0
Loamy Slopes	Loamy Slopes	25	8/24/2011		UNKNOWN		Decimal Degrees	WGS84		-108.156939	39.725273	0
Loamy Slopes	Loamy Slopes	27	8/10/2011		UNKNOWN		Decimal Degrees	WGS84		-108.18487	39.914169	0
Loamy Slopes	Loamy Slopes	27 (2011)	6/29/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.18487	39.914169	0
Loamy Slopes	Loamy Slopes	28	7/14/2011		UNKNOWN		Decimal Degrees	WGS84		-108.364481	39.712502	0
Loamy Slopes	Loamy Slopes	29	9/9/2011		UNKNOWN		Decimal Degrees	WGS84		-108.051508	39.925332	0
Loamy Slopes	Loamy Slopes	30	7/19/2011		UNKNOWN		Decimal Degrees	WGS84		-108.162252	39.894843	0
Loamy Slopes	Loamy Slopes	31	9/6/2011		UNKNOWN		Decimal Degrees	WGS84		-108.108556	39.851283	0
Loamy Slopes	Loamy Slopes	32	8/2/2011		UNKNOWN		Decimal Degrees	WGS84		-108.112886	39.873019	0
Loamy Slopes	Loamy Slopes	32 (2011)*	7/18/2012	CO			Decimal Degrees	WGS84		-108.112886	39.873019	2380
Loamy Slopes	Loamy Slopes	34	9/7/2011		UNKNOWN		Decimal Degrees	WGS84		-108.174667	39.877025	0
Loamy Slopes	Loamy Slopes	84	8/3/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.536	40.0426	2401
Mountain Loam	Mountain Loam	54	9/8/2011		UNKNOWN		Decimal Degrees	WGS84		-108.30157	39.624502	0
Mountain Loam	Mountain Loam	55	7/18/2011		UNKNOWN		Decimal Degrees	WGS84		-108.179103	39.894381	0
Mountain Loam	Mountain Loam	55 (2011)	6/20/2011	CO	UNKNOWN		Decimal Degrees	WGS84		-108.179103	39.894381	2244
Mountain Loam	Mountain Loam	56	7/26/2011		UNKNOWN		Decimal Degrees	WGS84		-108.141924	39.873765	0
Mountain Loam	Mountain Loam	56 (2011)	7/11/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.141924	39.873765	2257
Mountain Loam	Mountain Loam	57	8/22/2011		UNKNOWN		Decimal Degrees	WGS84		-108.560306	39.985265	0
Mountain Loam	Mountain Loam	67	7/26/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.5556	39.9306	2309
Pinyon-Juniper	Pinyon-Juniper	087	7/5/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.4265	39.9716	1958
Pinyon-Juniper	Pinyon-Juniper	2	7/19/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.208	39.9738	2005
Pinyon-Juniper	Pinyon-Juniper	3*	7/12/2012	CO	UNKNOWN		Decimal Degrees	WGS84		-108.180016	39.93043	0

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Repeat **Step 4** for each indicator to create a complete plot indicator shapefile.

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