

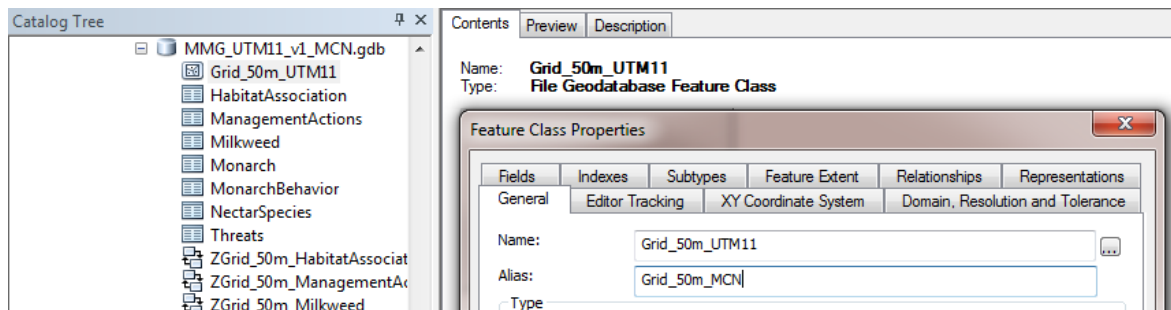
Appendix C. Milkweed Project Data Layers and Map Preparation Guidance

Table of Contents

Create a Refuge Specific MMG:	1
Processing Sample File:	2
Create the Transects:	3
Creating the Maps:	5
Results:	6

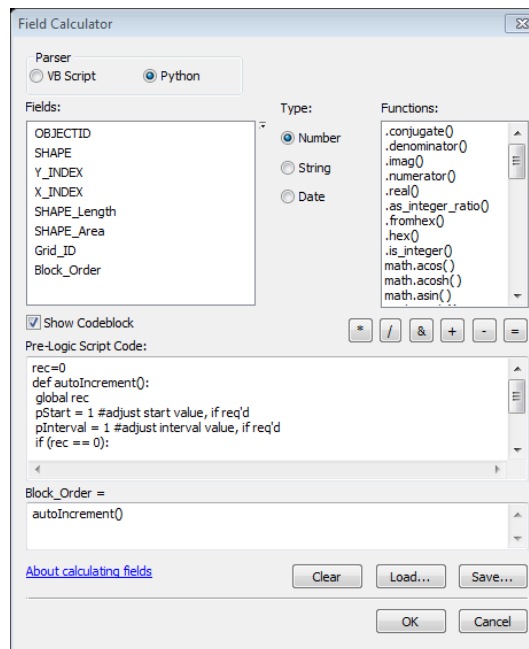
Create a Refuge Specific MMG:

1. Select the UTM Zone MMG Template that is appropriate for your refuge.
2. Create a Copy and rename to suit your refuge.
3. Open ArcCatalog. Expand geodatabase and prepare to load refuge specific grid.
4. Update Grid_50m_UTM11 feature class properties. Update the Alias to include the refuge name.



5. Load Grid_50m_UTM11 with grid or other polygon feature class. This grid was created in a prior operation using a Fishnet tool.
6. Import Feature Class for Grid_5k_UTM11. The 5 kilometer cell grid was used in the GRTS draw and it used in the field protocol. If the intent is to use a random order for Block level sampling. Add a field for Block_Order and calculate random values for the column. See Calculating Random Numbers.pdf

Or auto increment a value.



```
Code Block:
rec=0
def autoIncrement():
    global rec
    pStart = 1 #adjust start value, if
    req'd
    pInterval = 1 #adjust interval value,
    if req'd
    if (rec == 0):
        rec = pStart
    else:
        rec = rec + pInterval
    return rec
```

7. Open ArcMap. Develop a FWS refuge boundary feature class (and/or other pertinent spatial files), and easy way to do this is to export data in the data frame to the geodatabase.

Processing Sample File:

1. Clip out (using the boundary located in the refuge specific MMG database) the sample sites for a particular refuge from the master file (created by Jenny Barnett, March 2016), save data to the refuge specific database in the local UTM projection. This must match the projection of the grid layers.
2. Further processing will occur on the refuge specific file.
3. Remove out any overlapping sample sites (make sure the stratum is specific to the refuge at hand).
4. Select 'Plot_Order' records with values 1 through 15. Use the Field Calculator to update the 'panel' value to 1 on the selected records.
5. Repeat. Create up to four panels.
6. Select all sample sites that are inappropriate (located in open water or other non-suitable habitat). Calculate the panel value for those records to 99.
7. Add a Distance field (integer). Calculate (Field Calculator) the value in the Distance column to 450. (for all records)
8. Add a Bearing field (integer). Calculate (Field Calculator) the value in the Bearing column to 0. (for all records)
9. Calculate Geometry for the Latitude and Longitude columns to the appropriate local UTM Zone coordinates.

Table Options

OBJECTID	Y_INDEX	X_INDEX	Grid_ID	SiteName	Latitude	Longitude	stratum	panel	sample	Plot_Order	xcoord	ycoord	Distance	Bearing
318944	41	50	MCN_T_41502		337124.232	5088251.751	MCN_B_00	1	Site-09006	1	-119.100887	45.92862	450	0
320045	96	160	MCN_T_961602		342624.232	5091001.751	MCN_B_01	1	Site-09353	1	-119.030852	45.95441	450	0
320182	103	151	MCN_T_1031512		342174.232	5091351.751	MCN_B_11	1	Site-09637	1	-119.03649	45.95758	450	0
320860	193	252	MCN_T_1932522		347224.232	5095851.751	MCN_B_12	1	Site-09913	1	-118.973116	45.999364	450	0
320990	201	257	MCN_T_2012572		347474.232	5096251.751	MCN_B_22	1	Site-10219	1	-118.970055	46.002853	450	0
321307	275	317	MCN_T_2753172		350474.232	5099951.751	MCN_B_23	1	Site-10552	1	-118.932042	46.036797	450	0

SurveySites_MCN

Create the Transects:

1. Open ArcToolbox > Data Management Tools > Features > Bearing Distance To Line.
2. Use the graphic below to help set-up the correct parameters. Be sure to use the appropriate coordinate system.
3. Name the new file SurveySites_LIT_Transects. LIT being the literal for the refuge.

Bearing Distance To Line

Input Table: SurveySites_HRNM

Output Feature Class: C:\Projects\IM_Databases\Regional_Milkweed\Refuge_MMG\MMG_UTM11_v1_HRNM.gdb\SurveySites_HRNM_Transects

X Field: Latitude

Y Field: Longitude

Distance Field: Distance

Distance Units: METERS

Bearing Field: Bearing

Bearing Units: DEGREES

Line Type (optional): GEODESIC

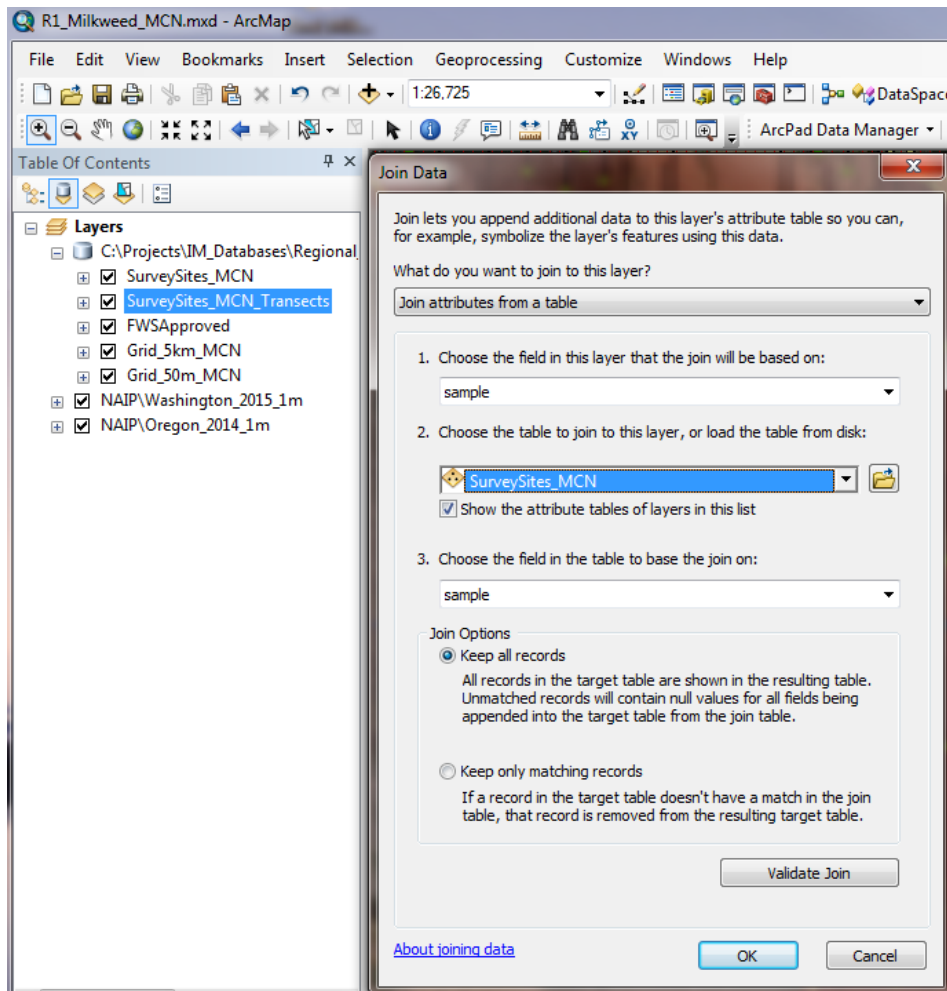
ID (optional): sample

Spatial Reference (optional): NAD_1983_UTM_Zone_11N

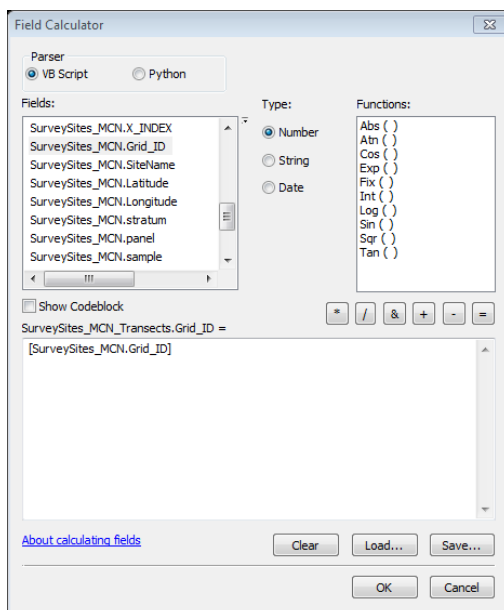
Output Feature Class: The output feature class containing densified geodetic lines.

OK Cancel Environments... << Hide Help Tool Help

4. Transfer attributes from Sample file to the Transect file. Add new fields to Transect feature class; Grid_ID (Text-20), Block (Text-20), Transect_Panel (Integer), Plot_Order (Integer), Start_Lat (Double), Start_Long (Double)
5. Create a Join based on the 'sample' between the 'survey sites' and 'transect' feature classes. Use the Field Calculator to move the attributes.



6. Use the Field Calculator to move the attributes between columns (of joined table).

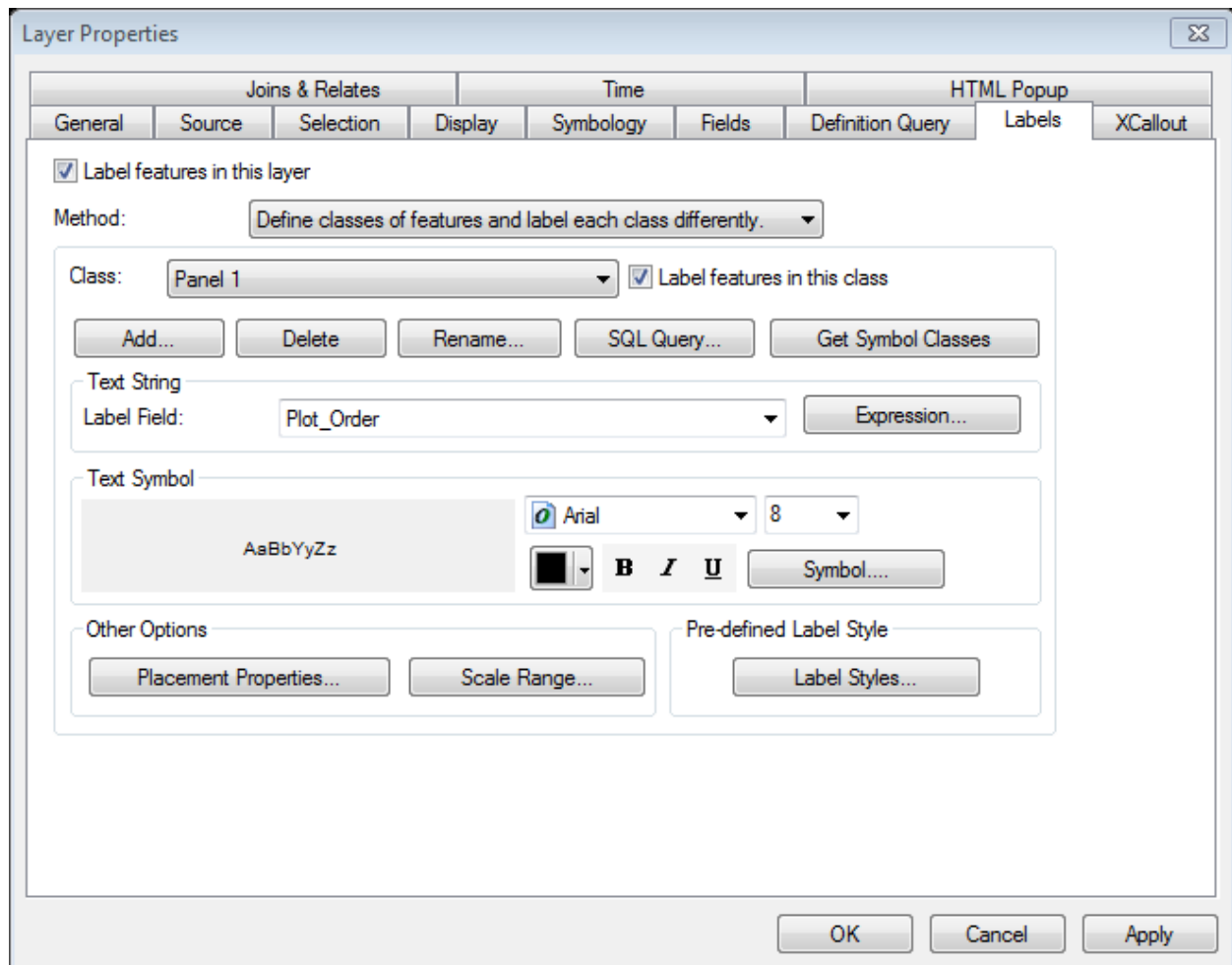


Grid_ID
 Block (=stratum)
 Transect_Panel (=panel)
 Plot_Order
 Start_Lat (=ycoord)
 Start_Long (=xcoord)

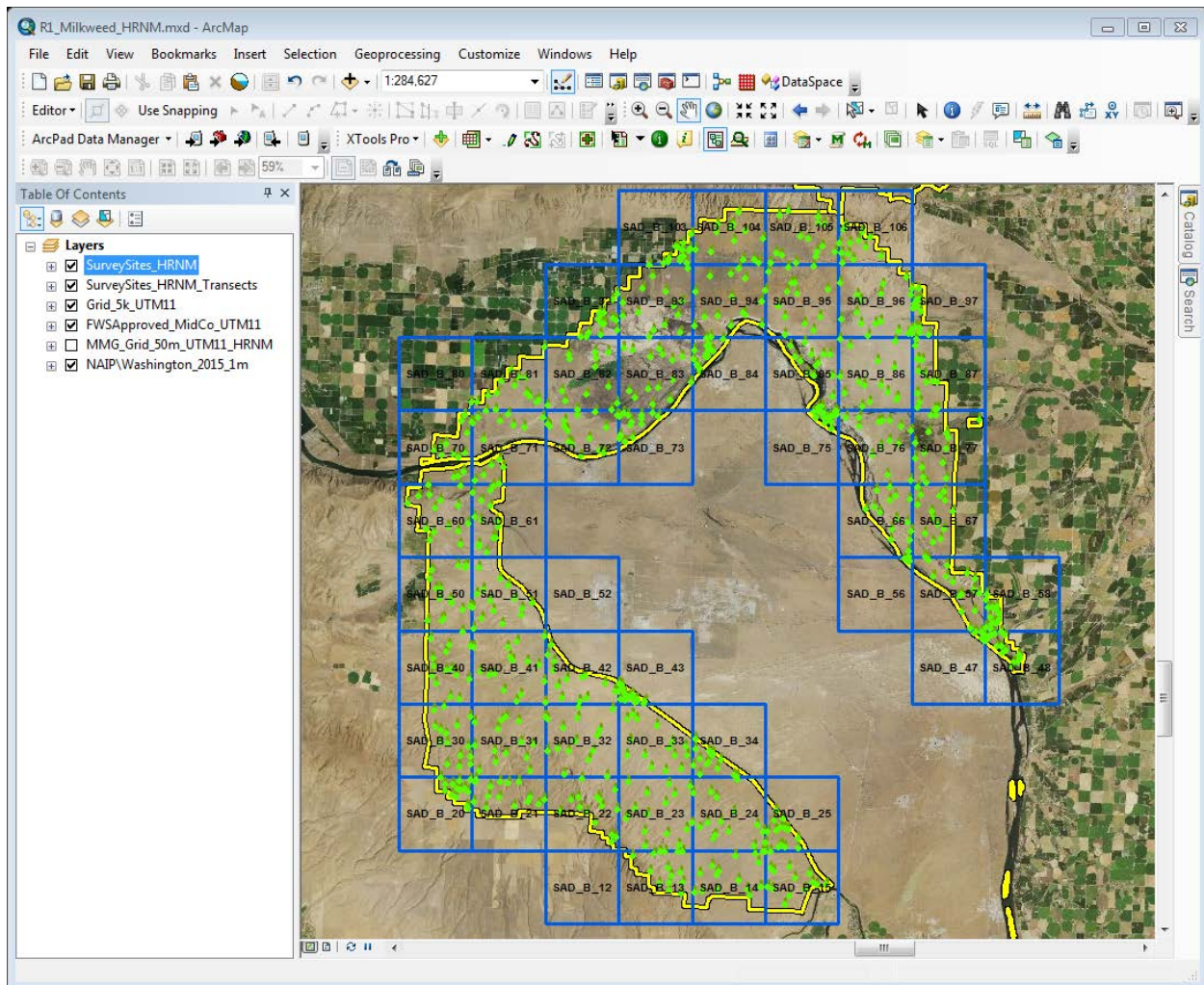
- Once the fields are calculated, remove the Join between the 'survey sites' and 'transect' feature classes.
- Definition queries are a nice way to develop the panel maps and focus down field data checkouts.

Creating the Maps:

- Develop site maps. Definition queries are a nice way to develop the panel maps.
- Label Sample Transect start points. In order to label only those transects in panel 1 (definition query), you would set-up label classes.



- Create a Class for Panel 1, Use the SQL Query to limit the labelled features to only those in panel.
- Keep label field of Plot_Order. Be sure the check box for Label features in the class is only turned on for the panel 1 (or whatever panel is being mapped).
- Label the Blocks.
- Set-up Bookmarks for each Block and one for the entire refuge.



First panel (plot order 1-15) in specific block.

