

Move Polygons to Point Coordinates

These instructions enable you to move/shift the position of polygon features based on the locations of point coordinates. ArcGIS 9.x software is used to:

- Generate the (random) point locations
- Join the point coordinate fields to the polygons
- Move the polygons – by centroid – to the new coordinates

An actual point features layer is used here, instead of randomly generating X and Y coordinate values in the polygon attribute table, because there are more options in using other tools to constrain the point generation to only inside another feature layer, enforce minimum distance between points, stratified sampling, etc. You may wish to use the free Hawth's Tools extension (www.spatial ecology.com) to help you generate random points or other point sampling layer.

ORIGINAL DATA

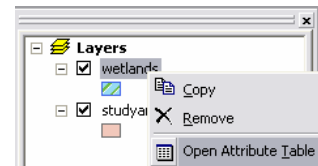
wetlands.shp a shapefile of polygon features to be moved
studyarea.shp extent of area for point generation

CREATED DATA

random375.shp the point coordinates used as new polygon centroid locations
moved_wetlands.shp a copy of the original polygon features that have been moved

Generate the (random) point locations

1. Start ARCMAP with a new empty map document
2. ADD DATA: **wetlands** and **studyarea** layers
3. OPEN ATTRIBUTE TABLE for wetlands and make note of the total number of polygon features (e.g. **375**)



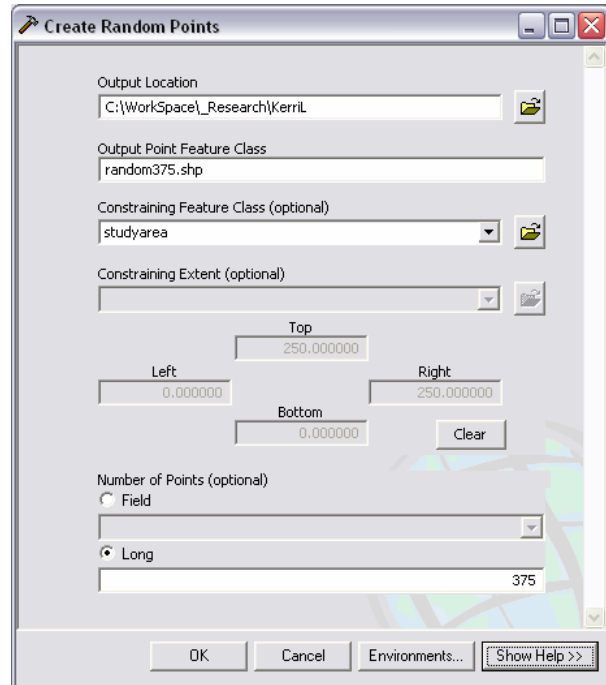
FID	Shape	OBJECTID	name	SHAPE_Leng	SHAPE_Area
0	Polygon	1	Natural_wetlands	201.392399	2046.544494
1	Polygon	2	Natural_wetlands	935.881329	4946.326643
2	Polygon	3	Natural_wetlands	270.872788	1696.37615
3	Polygon	4	Natural_wetlands	89.861366	578.219799
4	Polygon	5	Natural_wetlands	41.513462	121.205881
5	Polygon	6	Natural_wetlands	49.382017	149.648327
6	Polygon	7	Natural_wetlands	225.462669	2082.041615
7	Polygon	8	Natural_wetlands	32.350394	72.88007

Record: 0 of 375 Selected

4. In ArcToolbox, open the Data Management Tools >>> Features >>> CREATE RANDOM POINTS
5. Specify the following parameters:

- Output Location: your working directory/folder
 - Output Point Feature Class: **random375.shp**
 - Constraining Feature Class: **studyarea**
 - Number of Points: **375**
6. Click OK
 7. Generate as many additional sets of point coordinates that you need (of course give them each unique file names)

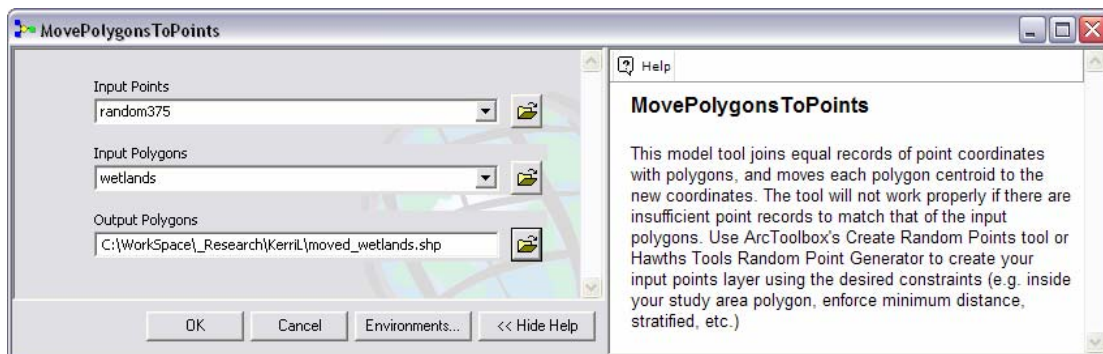
NOTE: See www.spatial ecology.com for details on how to generate random or regular points through Hawth's Tools >>> Sampling Tools.



Run the MovePolygonsToPoints tool

The geoprocessing tasks of joining tables, copying features, and invoking the field calculator on the polygon shape field to move the polygon features has been conveniently set up in ModelBuilder as a custom tool: MovePolygonsToPoints.

1. In ArcToolbox, right click on the name ArcToolbox and click ADD TOOLBOX
2. Navigate to where you saved the BIOSCI TOOLS toolbox, select it and click OPEN
3. In ArcToolbox, open the BIOSCI TOOLS >>> MOVEPOLYGONSTOPPOINTS tool
4. Specify the following parameters:



- Input Points: **random375**
 - Input Polygons: **wetlands**
 - Output Polygons: **moved_wetlands.shp**
5. Click OK
 6. Optionally, REPEAT for each set of input points