How do I calculate the distance between the centroids of polygons in ArcGIS?

Q: How do I calculate the distance between the centroids of polygons in ArcGIS?

Answer

A centroid is the center point of given polygon feature. To find the centroids of your polygon layer and calculate the distance between these points, follow this procedure:

1. Make sure your map is using a projected coordinate system.
2. Open the attribute table of your polygon layer, and click on the button in the top left corner and select Add Fields...
3. Add two fields named Cen_x and Cen_y, with the type as Double.
4. In Cen_X, right click on the header and select Calculate Geometry.
5. For Property, select "X Coordinate of Centroid", and select the units of your map.
6. Repeat these two steps for Cen_y using "Y Coordinate of Centroid" as the Property.
7. Click on Options > Export. Save the table as a DBF. Add the table to your map.
8. Right click on the newly created table, choose Display XY Data, select Cen_Y for the X and Cen_Y for Y, and select the map's coordinate system. An events layer will be created; note that the events layer is not a shapefile, but instead was created on the fly.
9. Open the Point Distance tool in ArcToolbox (Analysis Tools > Proximity > Point Distance). The event points are both the input and near features. Your output will be a DBF table of the distance between all points on the map.

See Also

- ArcGIS Landing Page

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