Week 9 Tutorial: Introduction to the Areal-Weighted Re-Aggregation (AWR) method

This method is helpful when BOTH of these two conditions are met:

(1) You are given counts that have been aggregated by one set of features and you want to study the counts using a new set of features.
   a. Origin features = the features that aggregate the counts (I also call these "Moms")
   b. Destination features = the new features that you want to study the counts with (I also call these "Dads")
(2) The boundaries of the Origin (Mom) features do not nest within the boundaries of Destination (Dad) features

Step	Task	Reason	Operation
1	Get all features that you will use in overlay analysis in same spatial coordinate reference system	Mamma Vector Principles	
2	Remove water features from block groups	Our method (AWR) assumes that entities (in our case, people) are distributed equally within each Origin Feature (in our case, Block Group)	ERASE
3	Calculate area of Moms	We will need to know the area of Source Features (Moms) that aggregate population counts for our areal-weighted proportions	Create Field>Calculate Geometry
4	Create Kids from Moms and Dads	We need to find the local intersections of the Source and Destination Features (Kids of Moms and Dads)	INTERSECT
5	Calculate area of Kids	We will need to know the area of Source-Destination intersections to calculate areal-weighted proportions (area of kids)	
6	Calculate areal-weighted values	We take the areal-weighted proportion of each population count in the Source Features (area of kid/area of mom)	Create Field>Field Calculator
7	Re-aggregate by Dad ids	We want to sum together the areal-weighted population counts by the Destination id (Dad)	DISSOLVE
8	Present in a table	We want to compare racial composition (as defined by Census) for districts within a state and between two states	