

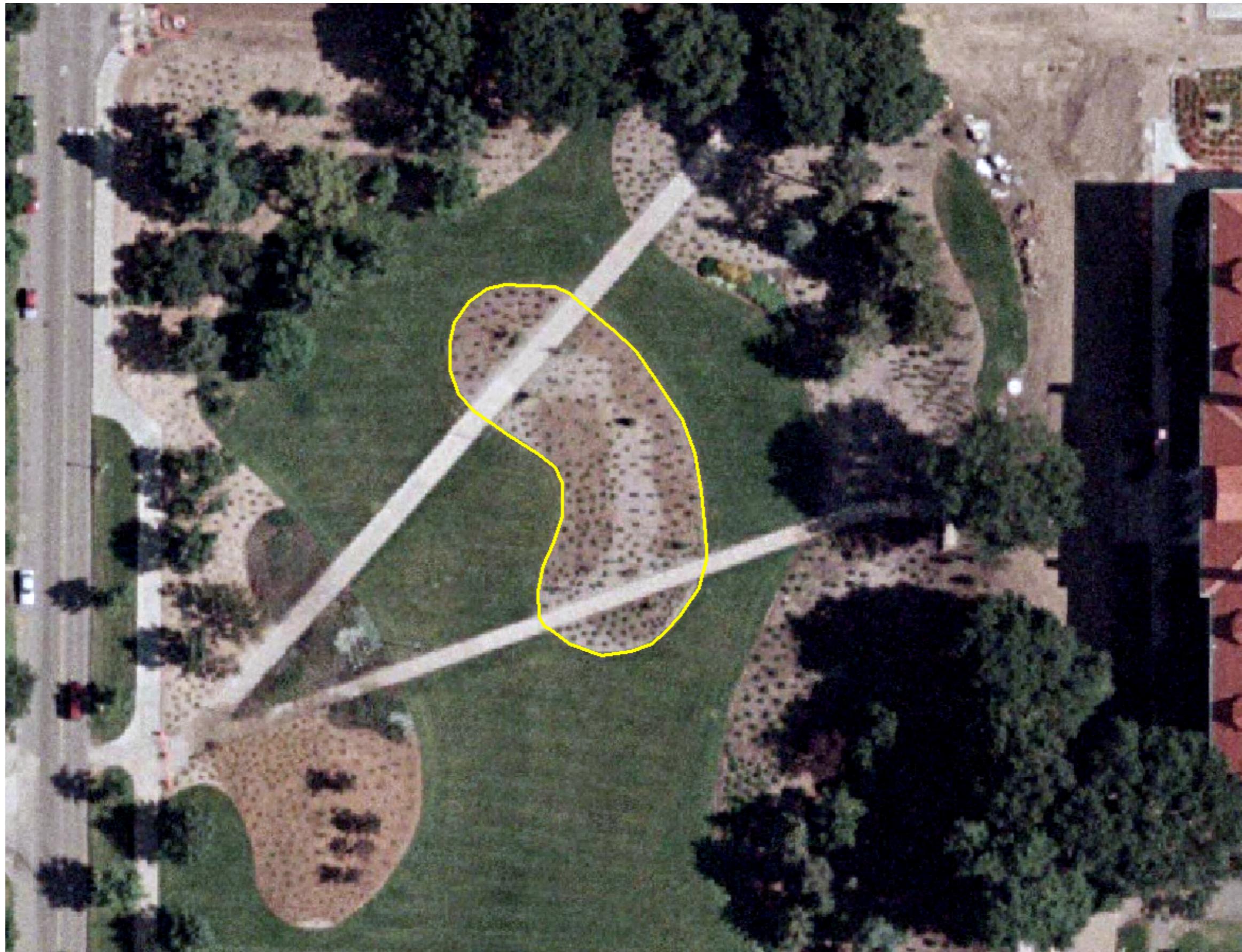
(Almost) Nothing is Pure



....or most everything
is at least a little mixed
up

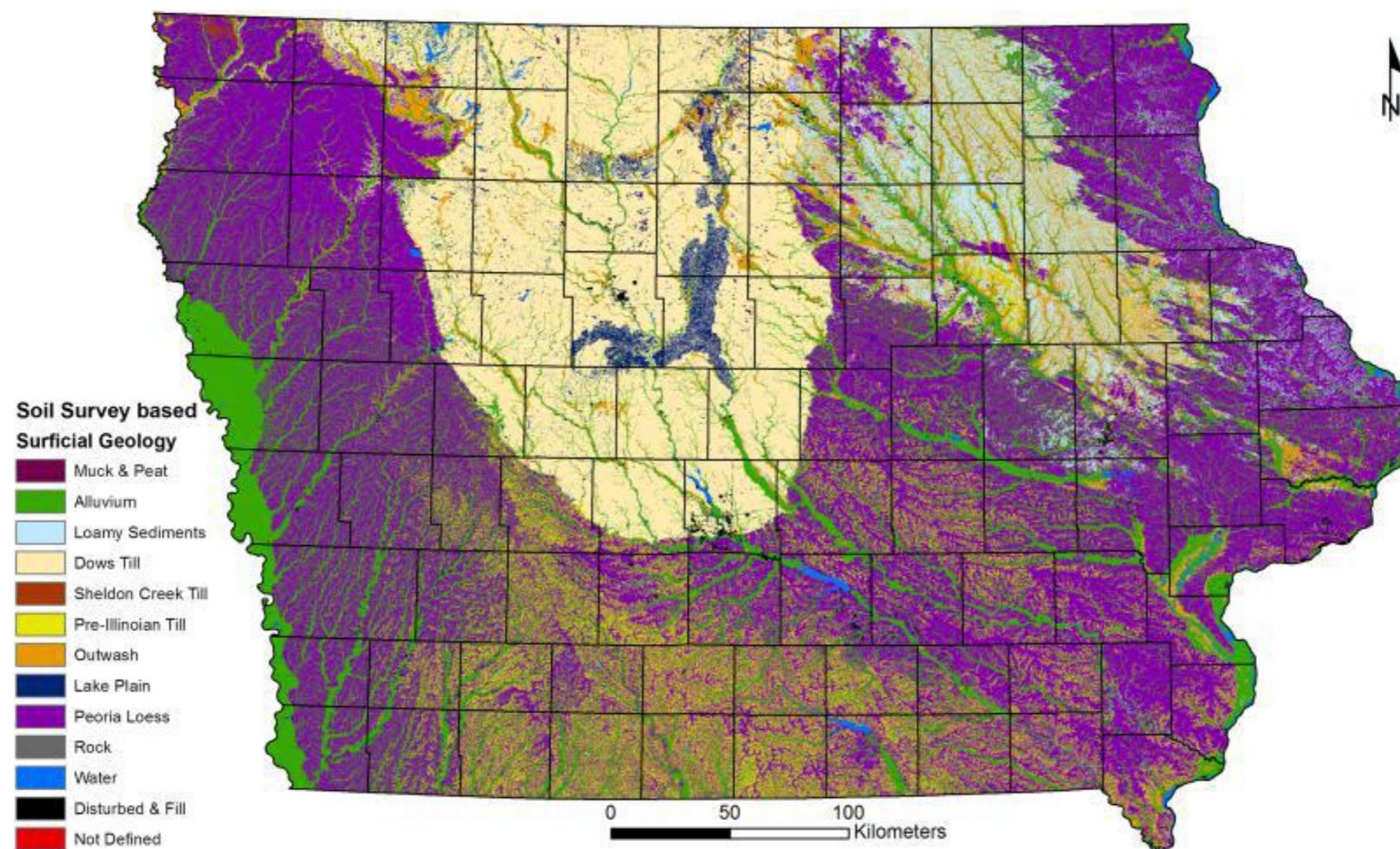


Enforced Uniformity in Vector Polygons

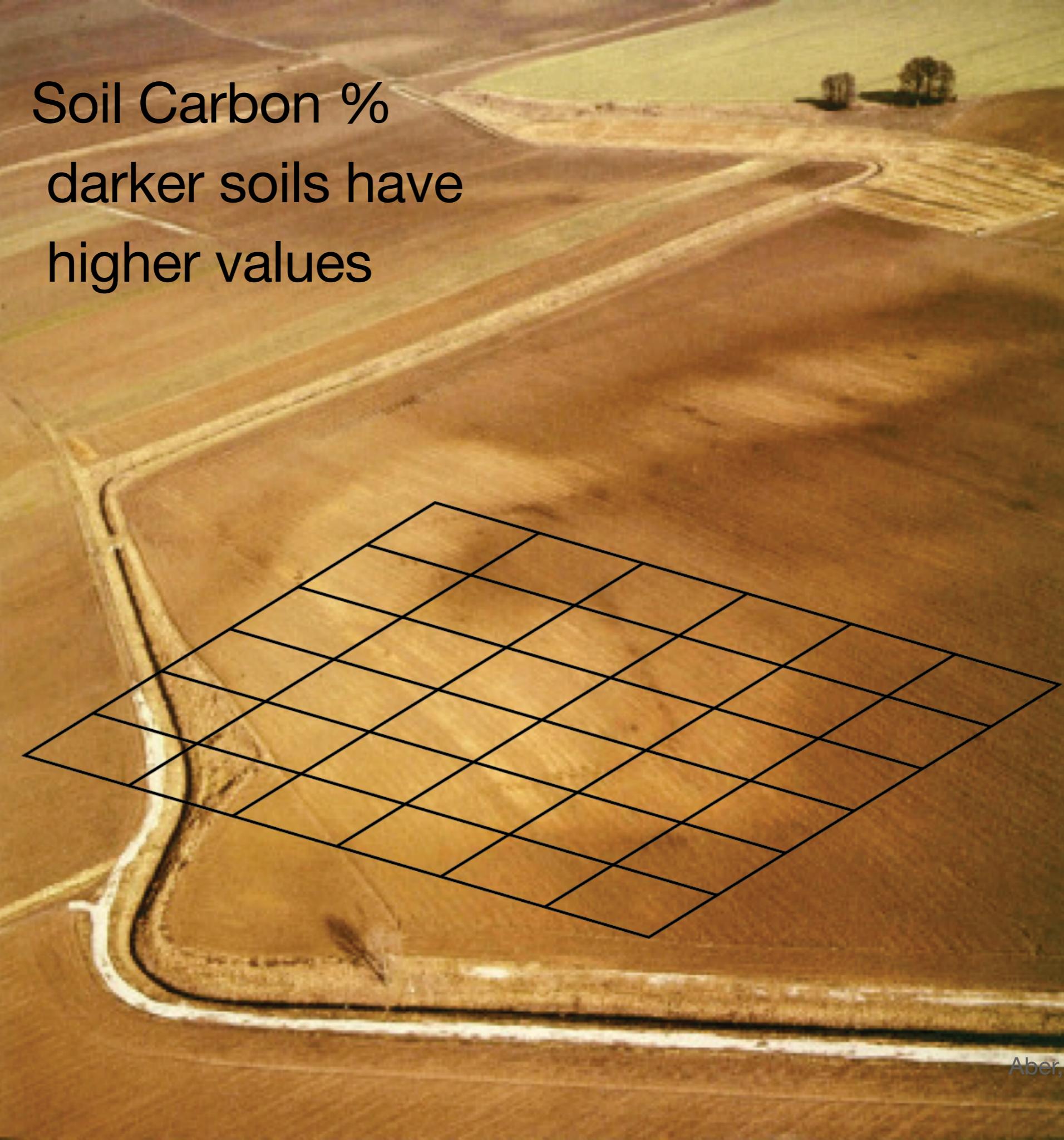


From NRCS Soil Survey Mapping Description:

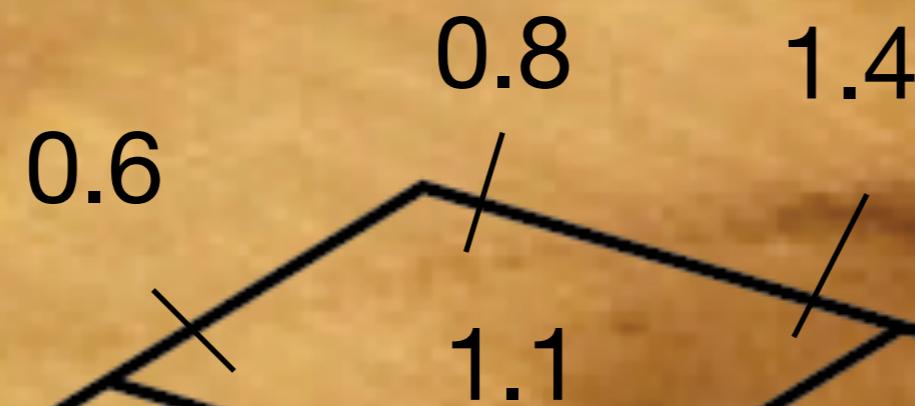
“Areas of soil that were **markedly different** in use and management **but too small** to be delineated at the scale of mapping were described as **inclusions** in map units or denoted by a spot symbol on the map. When the mapping is presented **at a larger scale**, these areas may appear to be **errors** in the map.”



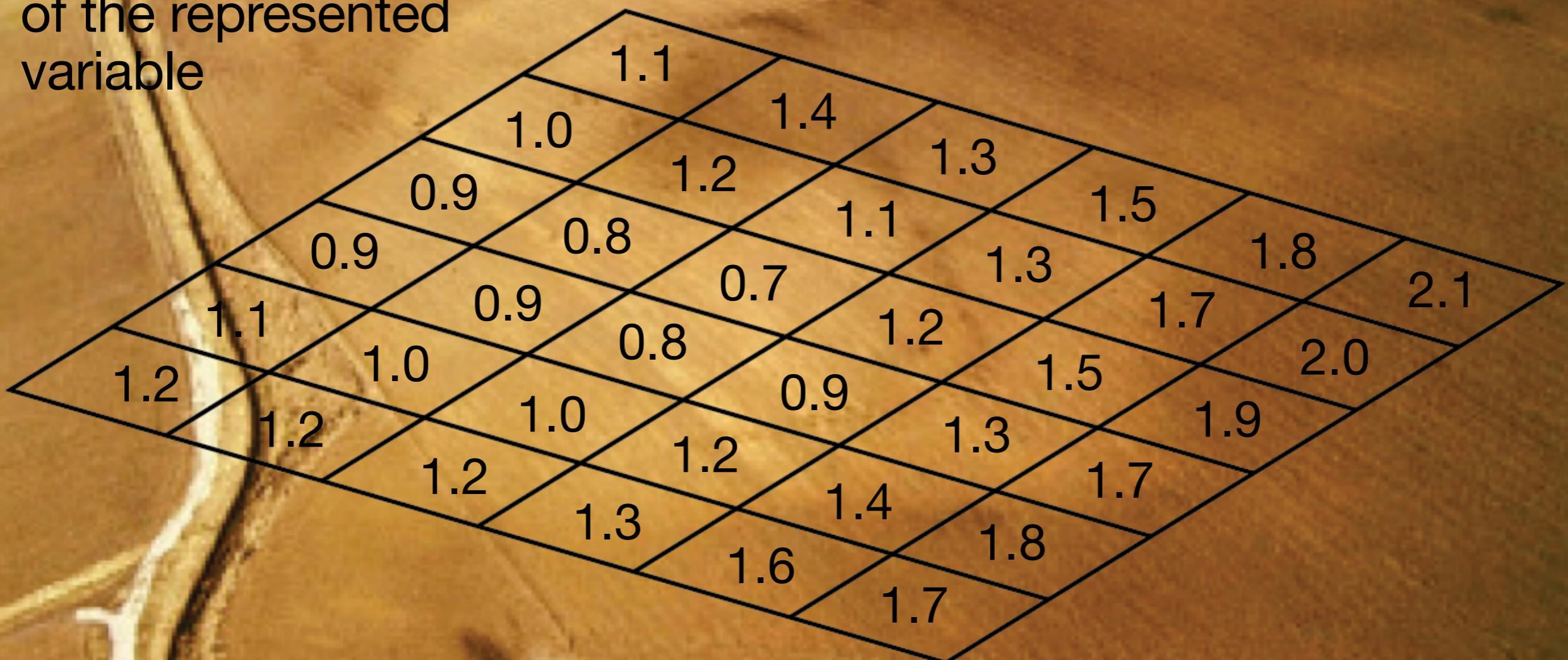
Soil Carbon %
darker soils have
higher values



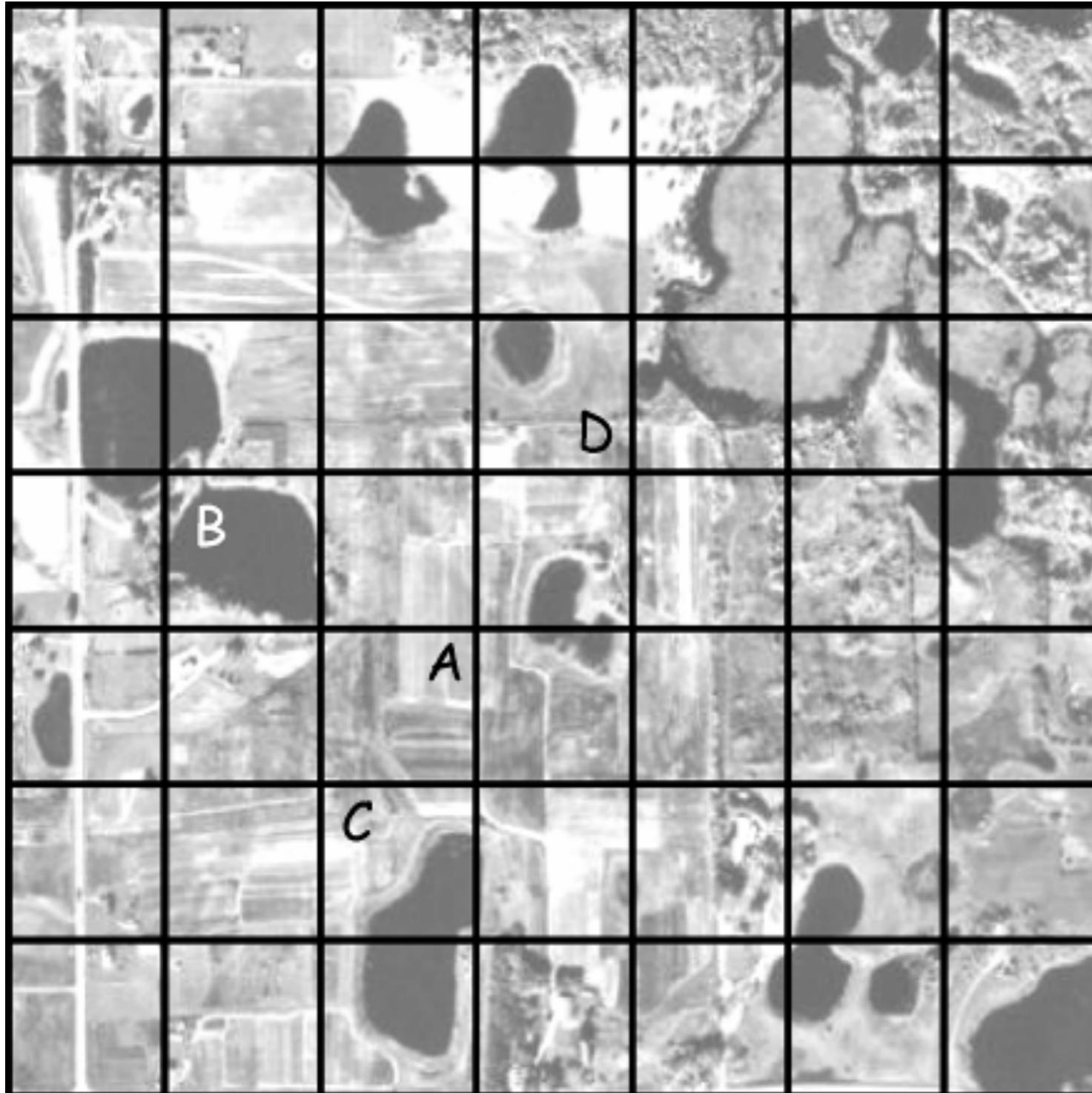
Soil Carbon %
darker soils have
higher values



Each cell value is
some function
(average,
maximum)
of the represented
variable



Raster – Mixed Pixels in Assigning Categories

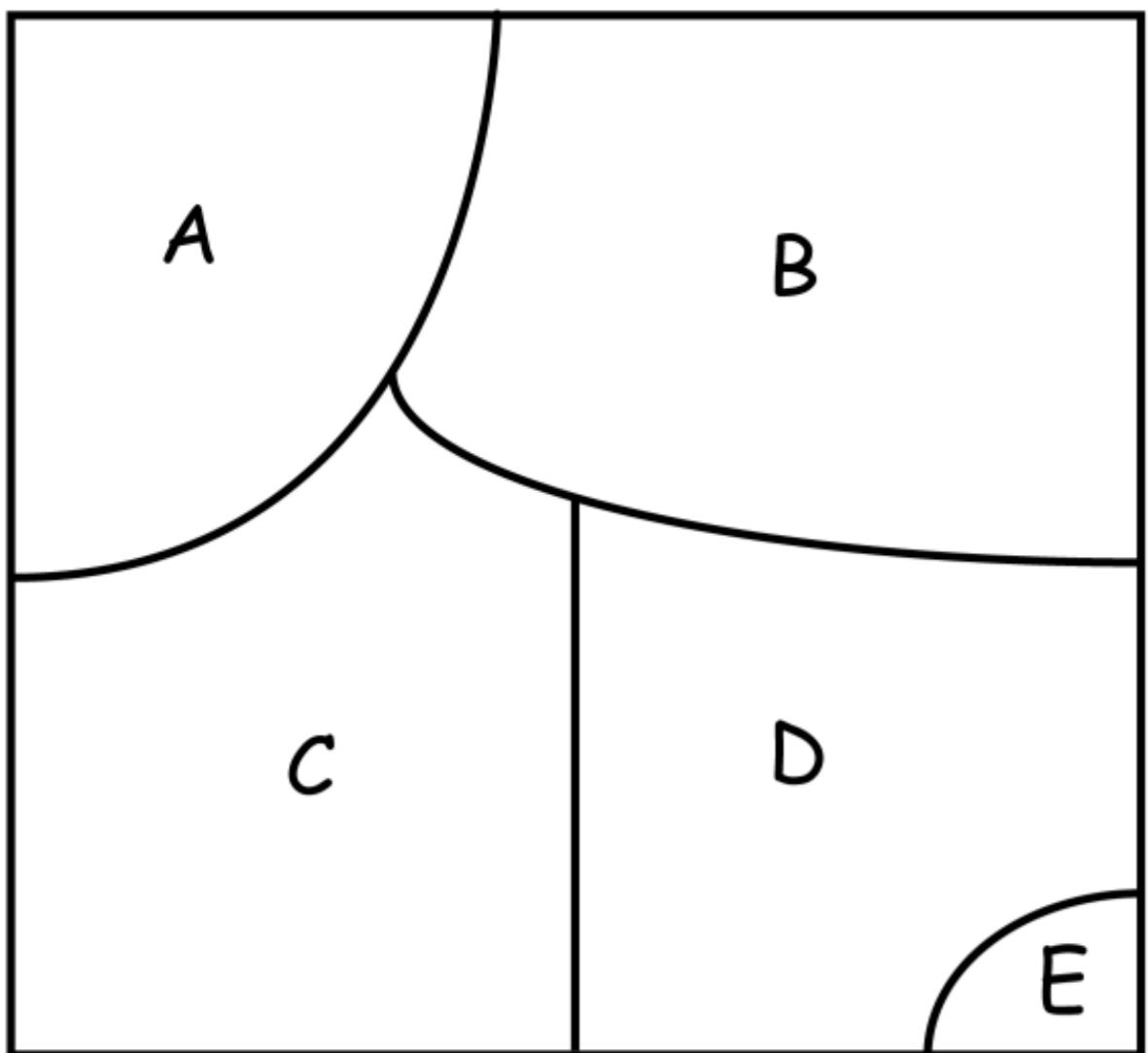


Landcover map –
Two classes, land or water
Cell A is straightforward.

What category
(1=land, 2=water)
to assign for

B,
C,
or D?

Tables, raster/vector contrast



IDorg	class	area
A	10	16.8
B	11	22.2
C	15	18.4
D	21	16.4
E	10	3.8

Many-to-one common (normal) in raster data sets, to tame the attribute table

c) Raster, many-to-one

attribute table

10	10	10	10	11	11	11	11	11	11
10	10	10	10	11	11	11	11	11	11
10	10	10	10	11	11	11	11	11	11
10	10	10	11	11	11	11	11	11	11
10	10	10	15	15	11	11	11	11	11
15	15	15	15	15	21	21	21	21	21
15	15	15	15	15	21	21	21	21	21
15	15	15	15	15	21	21	21	21	21
15	15	15	15	15	21	21	21	10	10
15	15	15	15	15	21	21	10	10	10

class	area
10	18.4
11	24.0
15	21.6
21	13.6

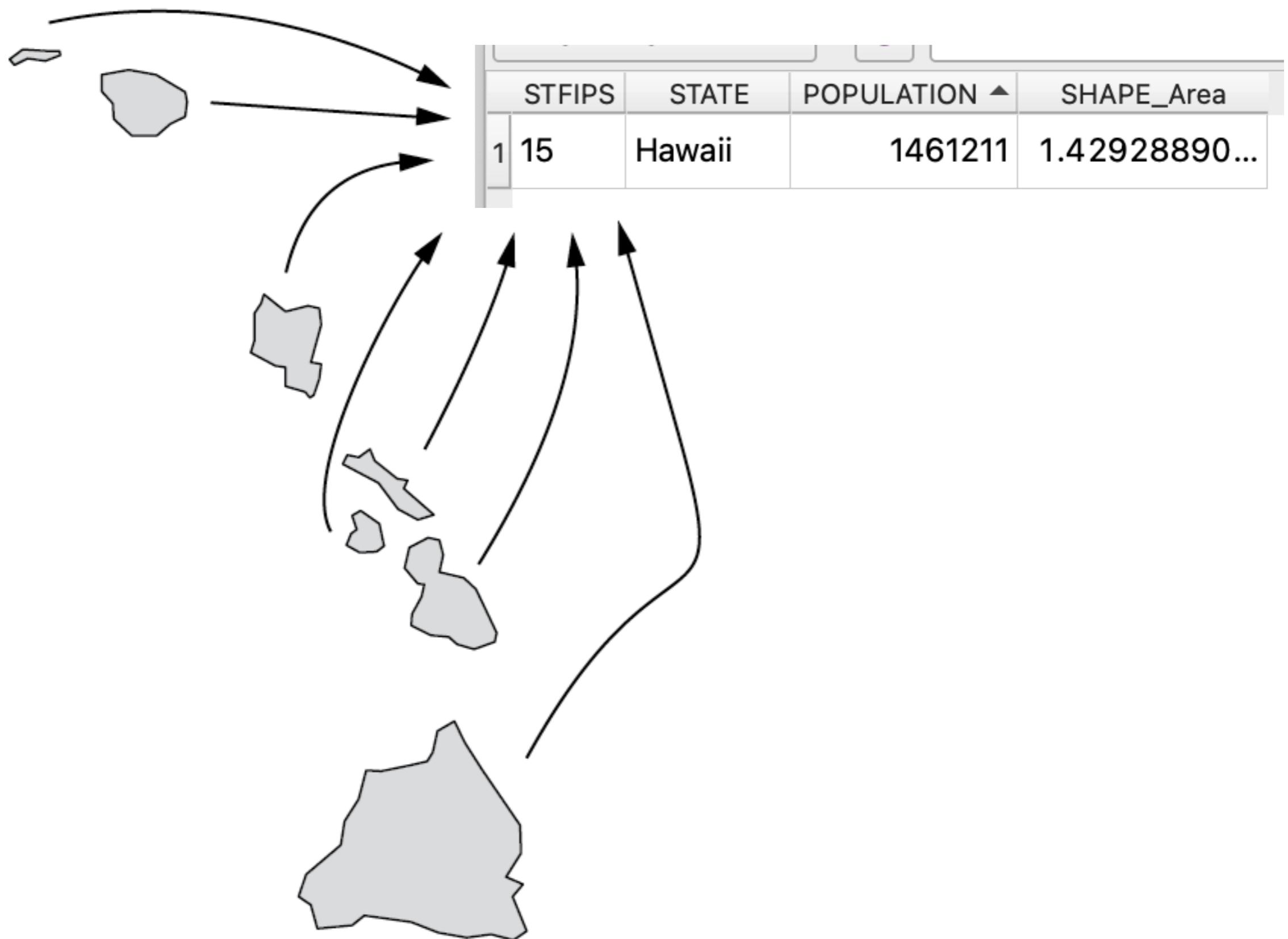
Multi-part vs. Single-part Shapes



State	ID	Popul.	...
Alabama	...		
Alaska			
Hawaii			
...			
Minnesota			

Can we have one table row for each state?

Multi-part Shapes



Multi-part Shapes

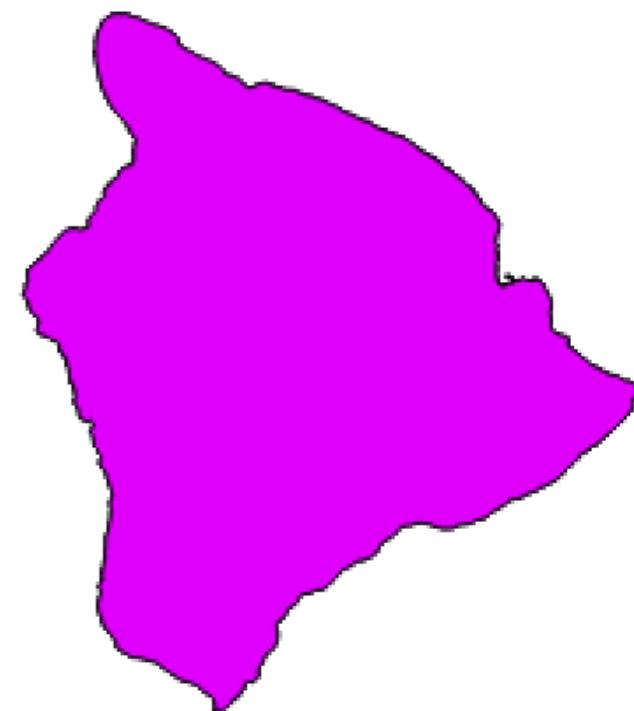
We can split the polygons and create single-part shapes, that is, create a new layer with a table that has a row for each polygon, generally known as a multipart-to-singlepart conversion



Attribute table – hawaii :: Features total: 1, filtered: 1, selected: 0

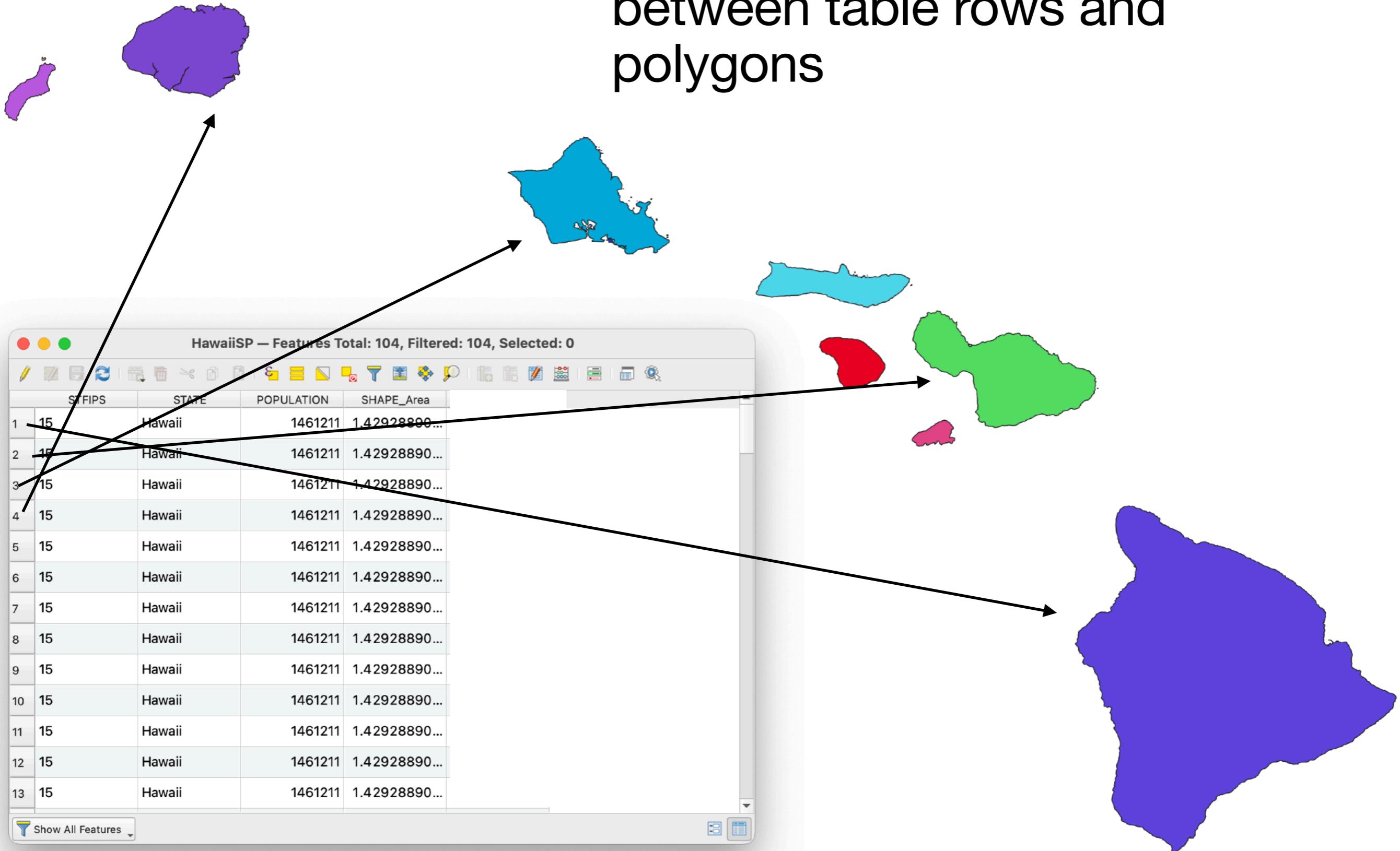
GEOID10	POP10	isleID
0 150070412...	1360301	1

Show All Features

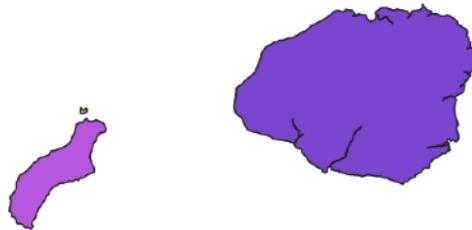


Single Part Shapes

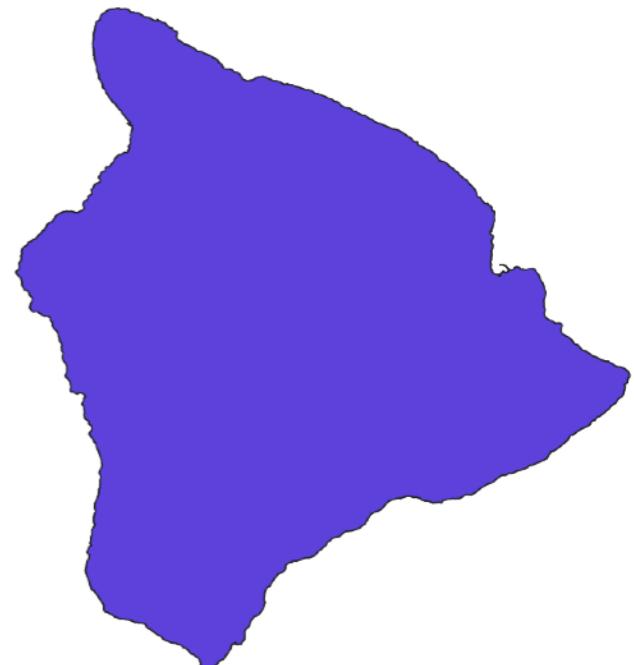
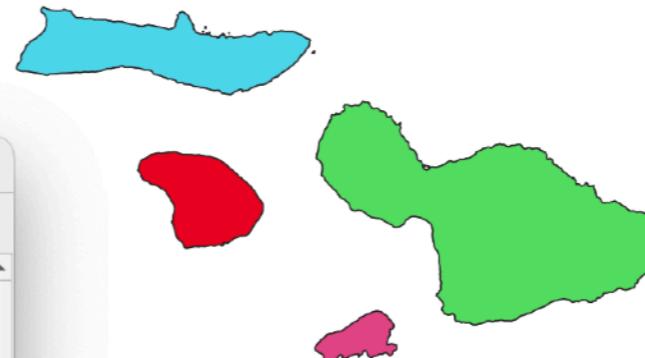
Note on conversion there is now a one-to-one relationship between table rows and polygons



Single Part Shapes



But note that population, area are just (erroneously) copied, like leading to errors in subsequent analysis



HawaiiSP — Features Total: 104, Filtered: 104, Selected: 0

	STFIPS	STATE	POPULATION	SHAPE_Area
1	15	Hawaii	1461211	1.42928890...
2	15	Hawaii	1461211	1.42928890...
3	15	Hawaii	1461211	1.42928890...
4	15	Hawaii	1461211	1.42928890...
5	15	Hawaii	1461211	1.42928890...
6	15	Hawaii	1461211	1.42928890...
7	15	Hawaii	1461211	1.42928890...
8	15	Hawaii	1461211	1.42928890...
9	15	Hawaii	1461211	1.42928890...
10	15	Hawaii	1461211	1.42928890...
11	15	Hawaii	1461211	1.42928890...
12	15	Hawaii	1461211	1.42928890...
13	15	Hawaii	1461211	1.42928890...

Show All Features

Original Data - population by small sampling unit

If you need finer grain data, get from the source and maintain it - beware of inflating multi-part shapes, and the effect copying has on row values

