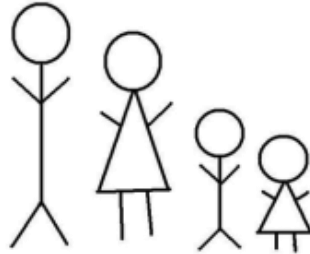


Attaching Contextual Variables to Microdata



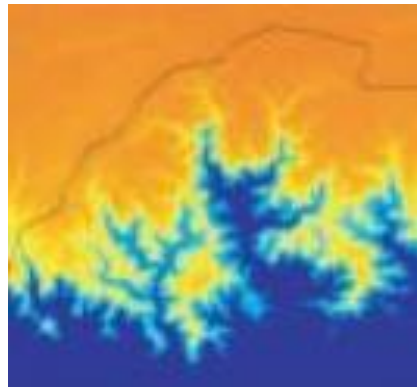
Contextual Variables

Microdata

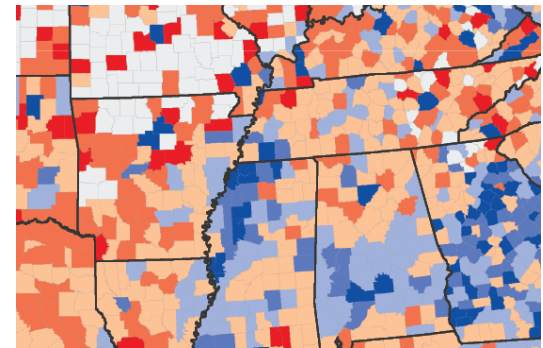


Individuals and households
with their environmental
and social context

AGE	SEX	LANDCOV	AVGTEMP
10	Male	Forest	21.20
27	Female	Forest	24.30
54	Female	Pasture	24.10
37	Male	Cropped	25.60
37	Female	Cropped	28.10
42	Female	Urban	26.70
20	Female	Forest	24.30
39	Male	Urban	26.80
77	Female	Cropped	27.70
11	Female	Cropped	22.30
31	Female	Pasture	25.10
23	Male	Forest	24.40
24	Female	Urban	21.50
40	Female	Urban	23.40



Rasters



Area-level data



Microdata Geography Variables

Province District
Country Enumeration Area

```
H9100002400000000088001001000220100  
P910000020101032120010010010011504  
P910000010201036220010010010011999  
P910201000301011220060010010011999  
P910201000301009120060010010011999  
P910201000301007120060010010011999  
P910201000301006120060010010011999  
P910201000301004220060010010011999  
P910201000301003220060010010011999  
P910201000301002220060010010011999  
H9100002400000000088001001000110100  
P910000020101030110010290510511310  
P910000010201021210010290290171999  
P910201000301001110060010290291999
```

Codes are linked to codes on boundary maps

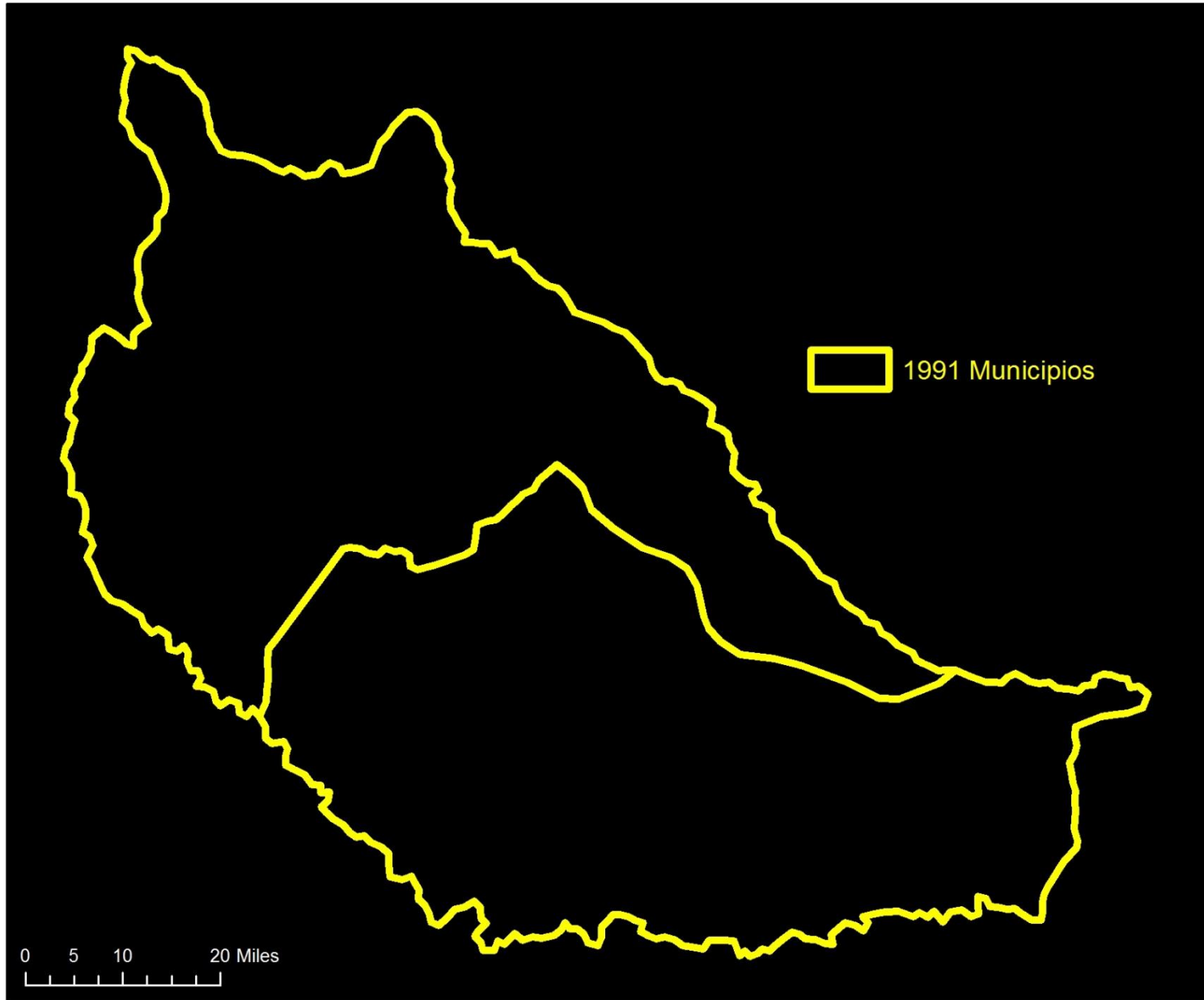


Boundary Processing

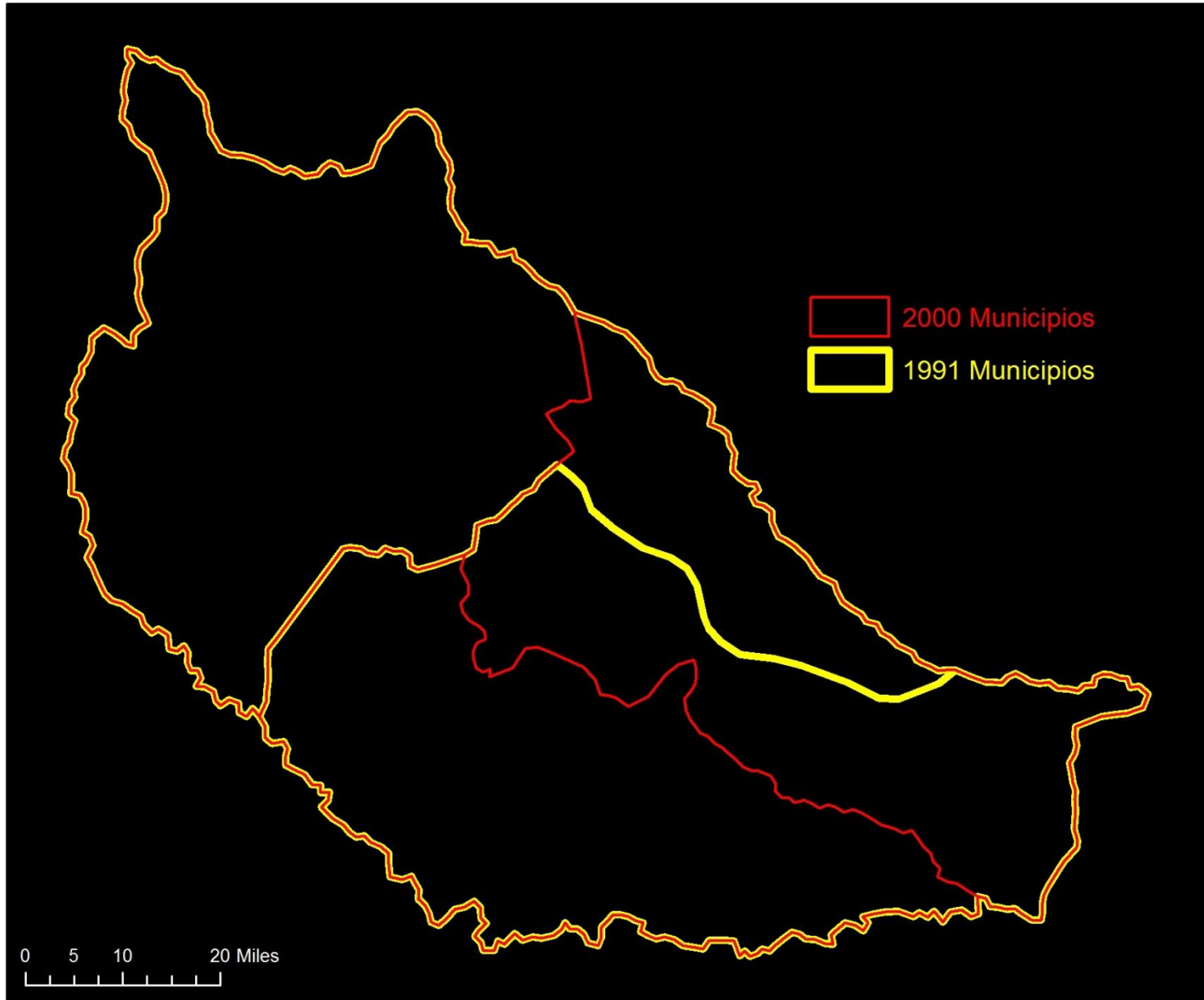
- Obtaining necessary GIS data
 - Digital sources preferred
 - Analog (e.g., paper maps) sources often only choice for historical maps
- Harmonization
 - Create least common denominator units over time
- Regionalization, if necessary
 - Aggregate harmonized units until population $\geq 20,000$ persons
 - 20,000 persons is threshold for identifying geographic units specified in agreements with IPUMS-I partner statistical agencies



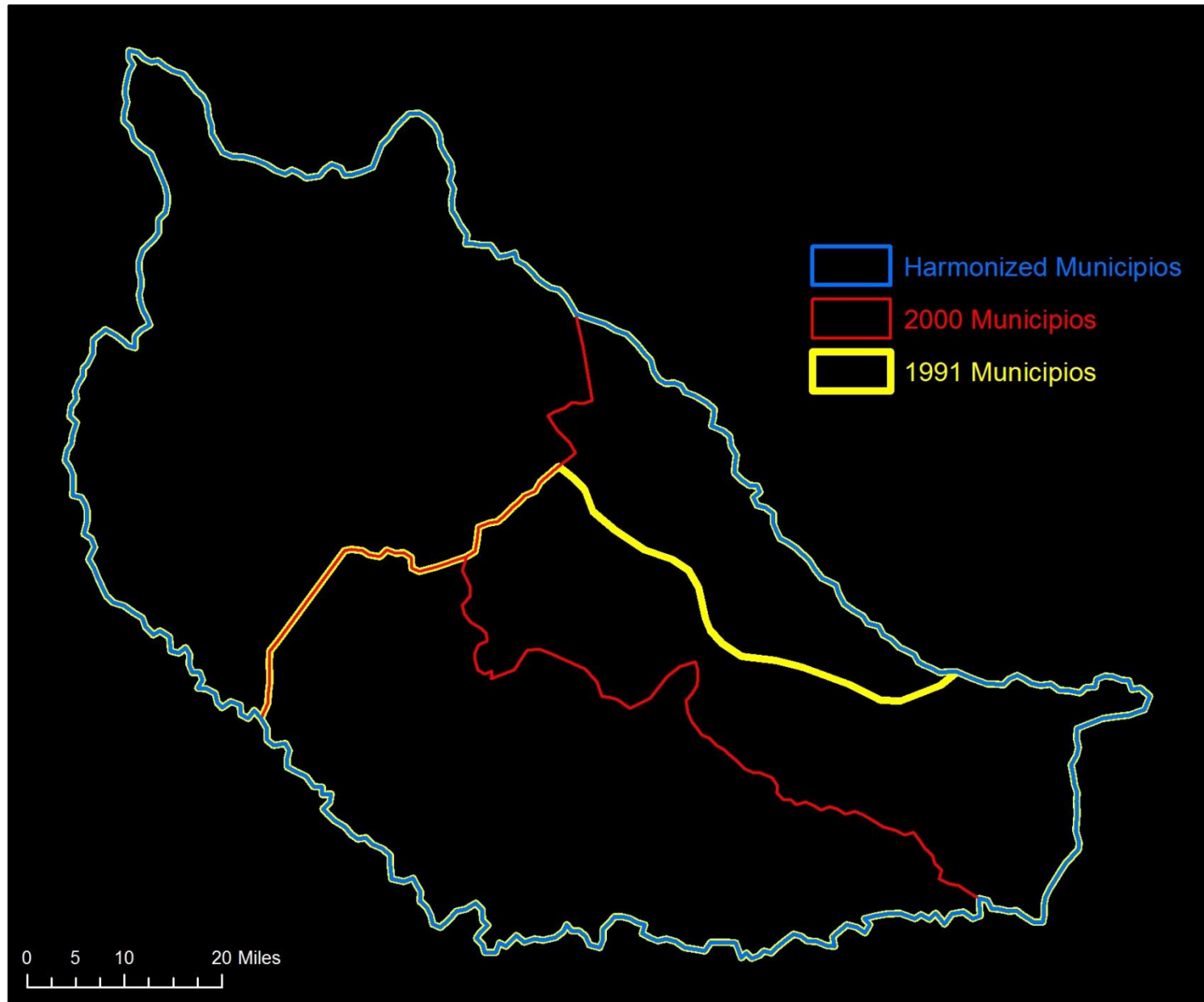
Harmonization



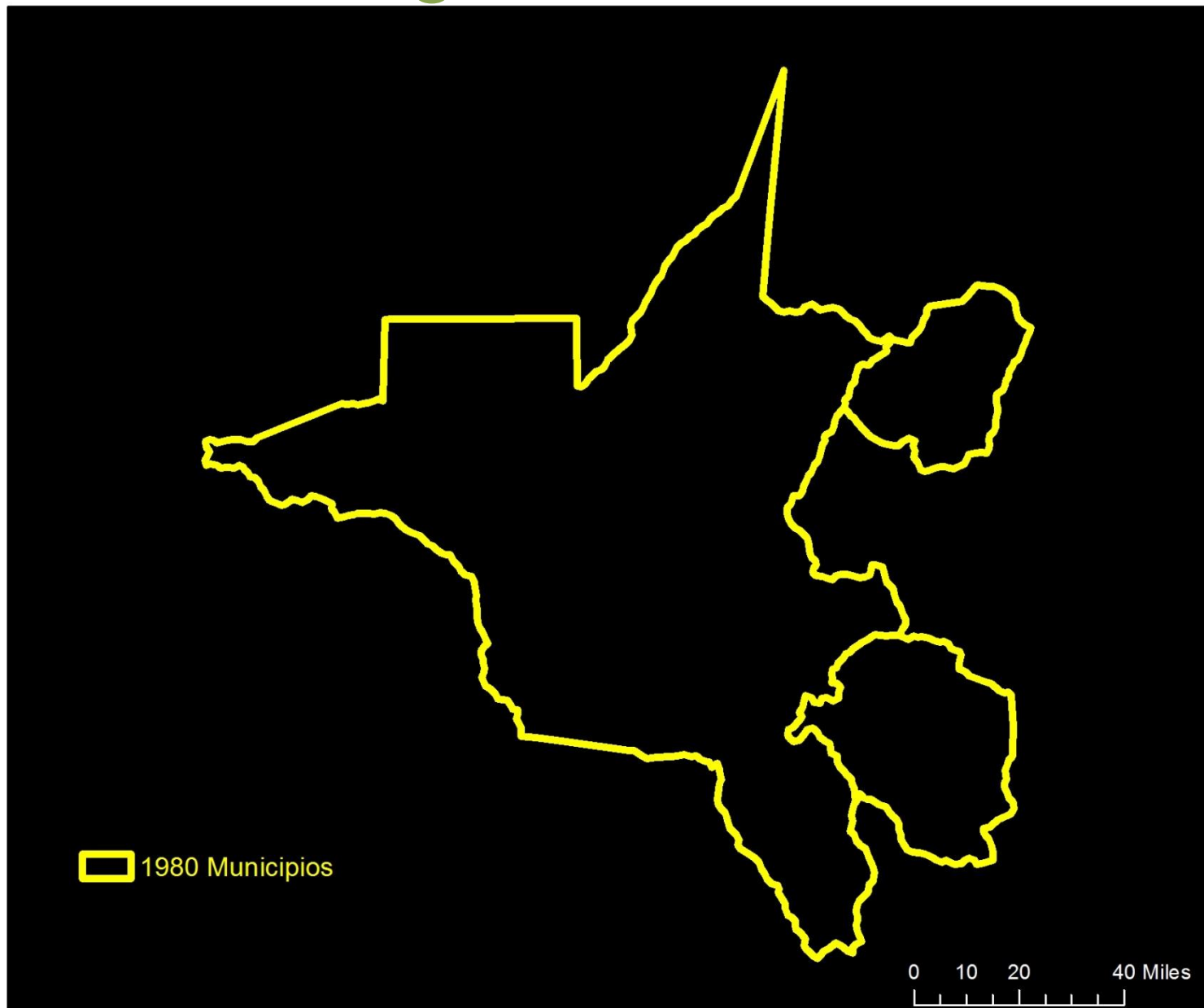
Harmonization



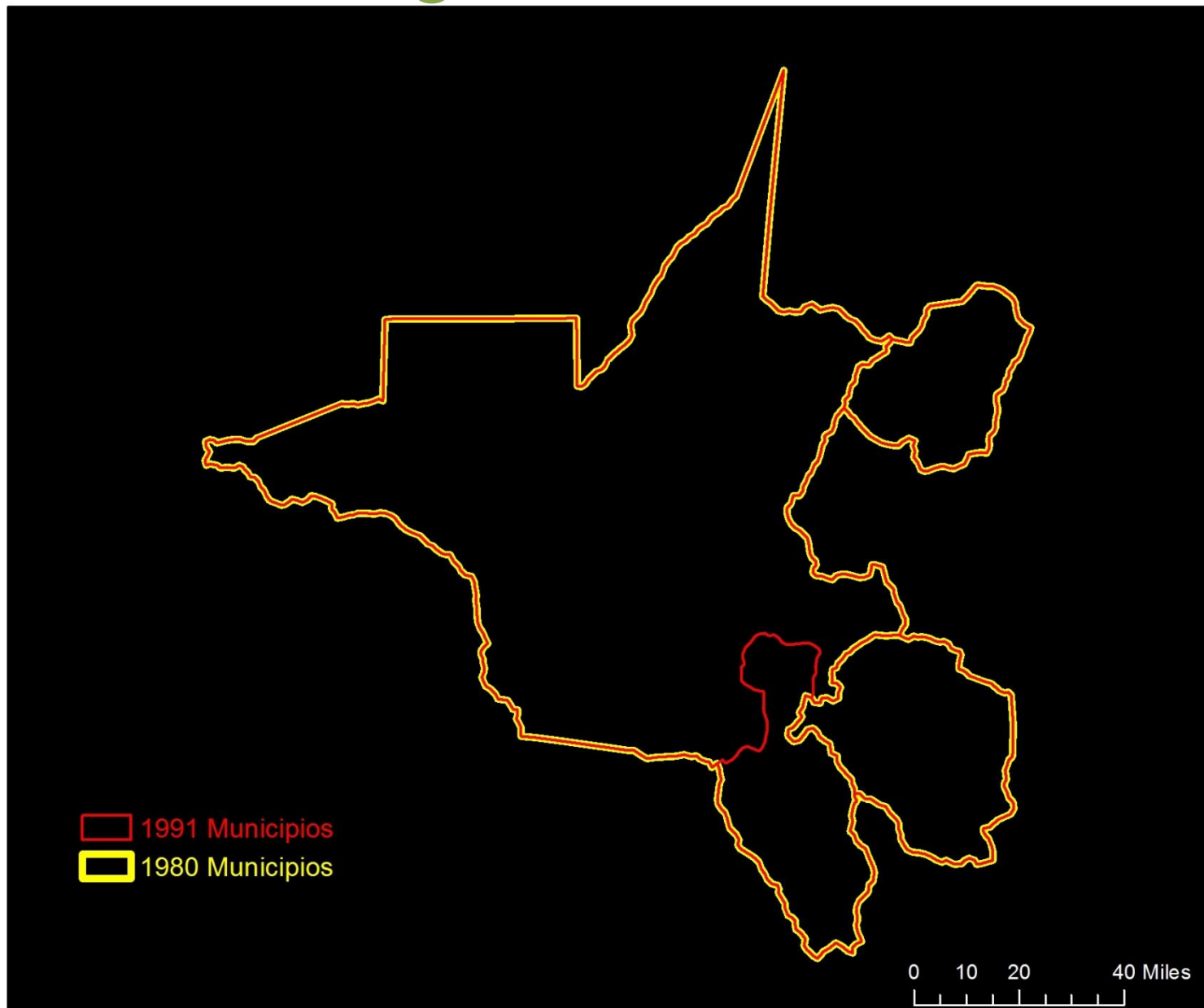
Harmonization



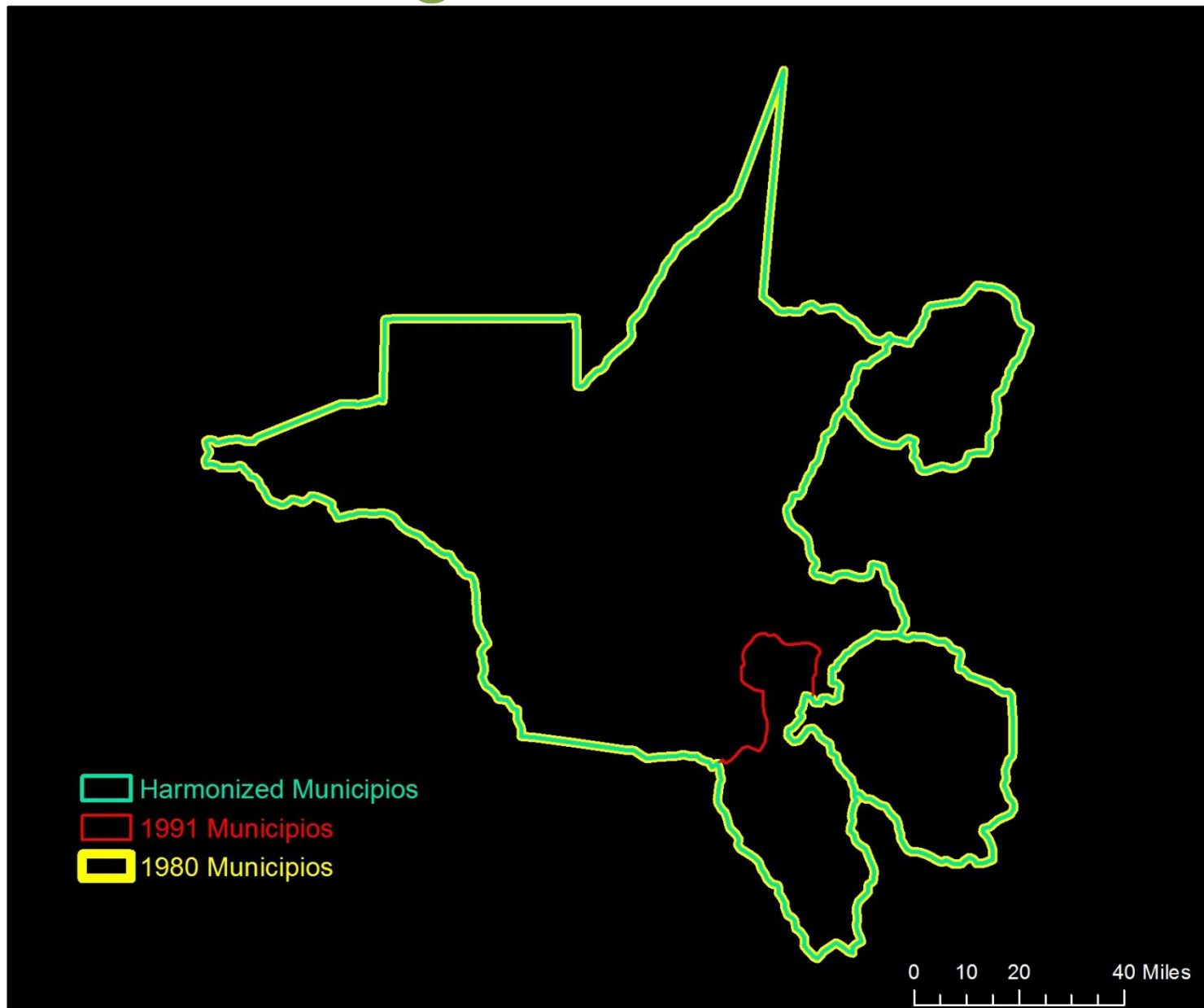
Regionalization



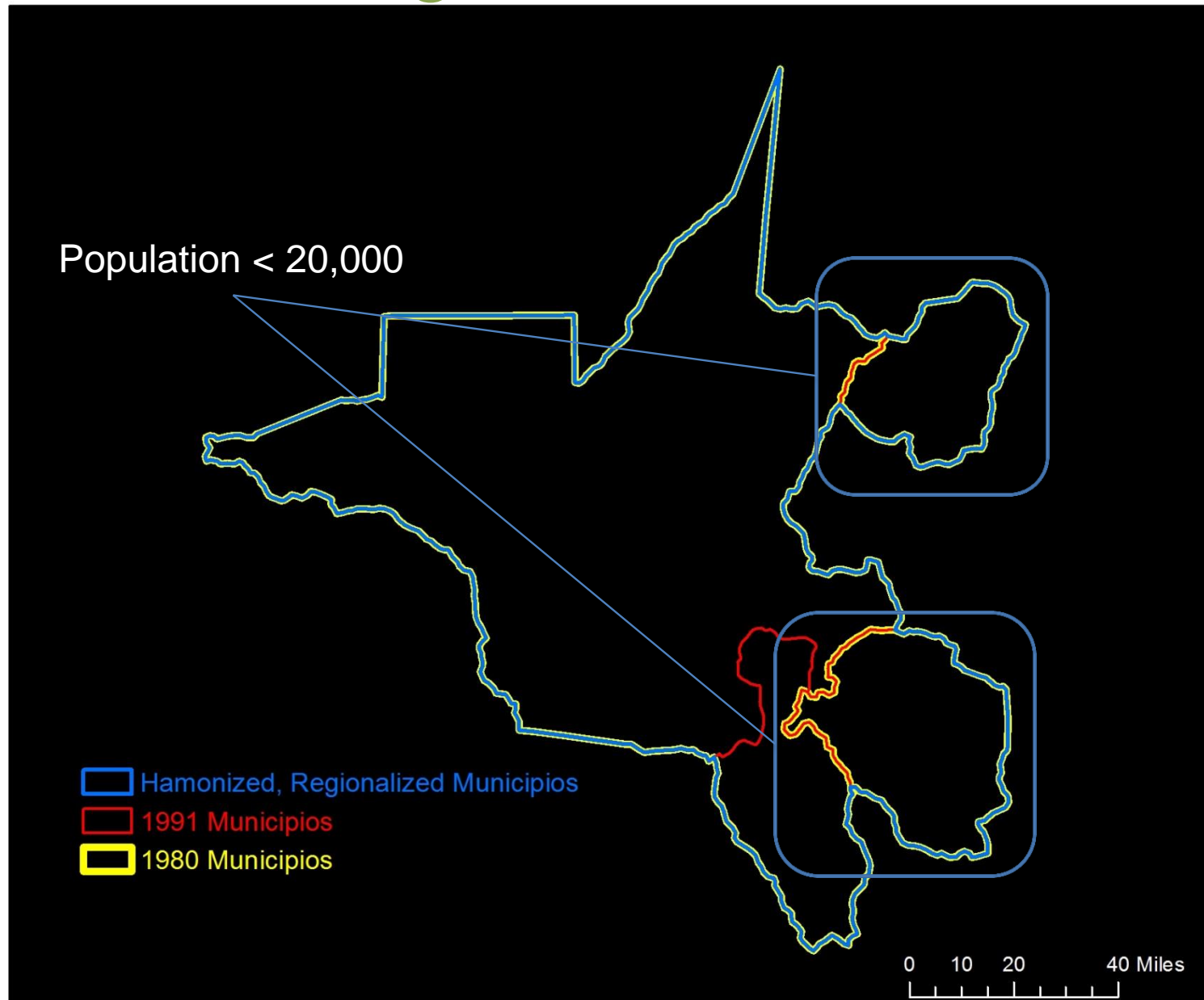
Regionalization



Regionalization



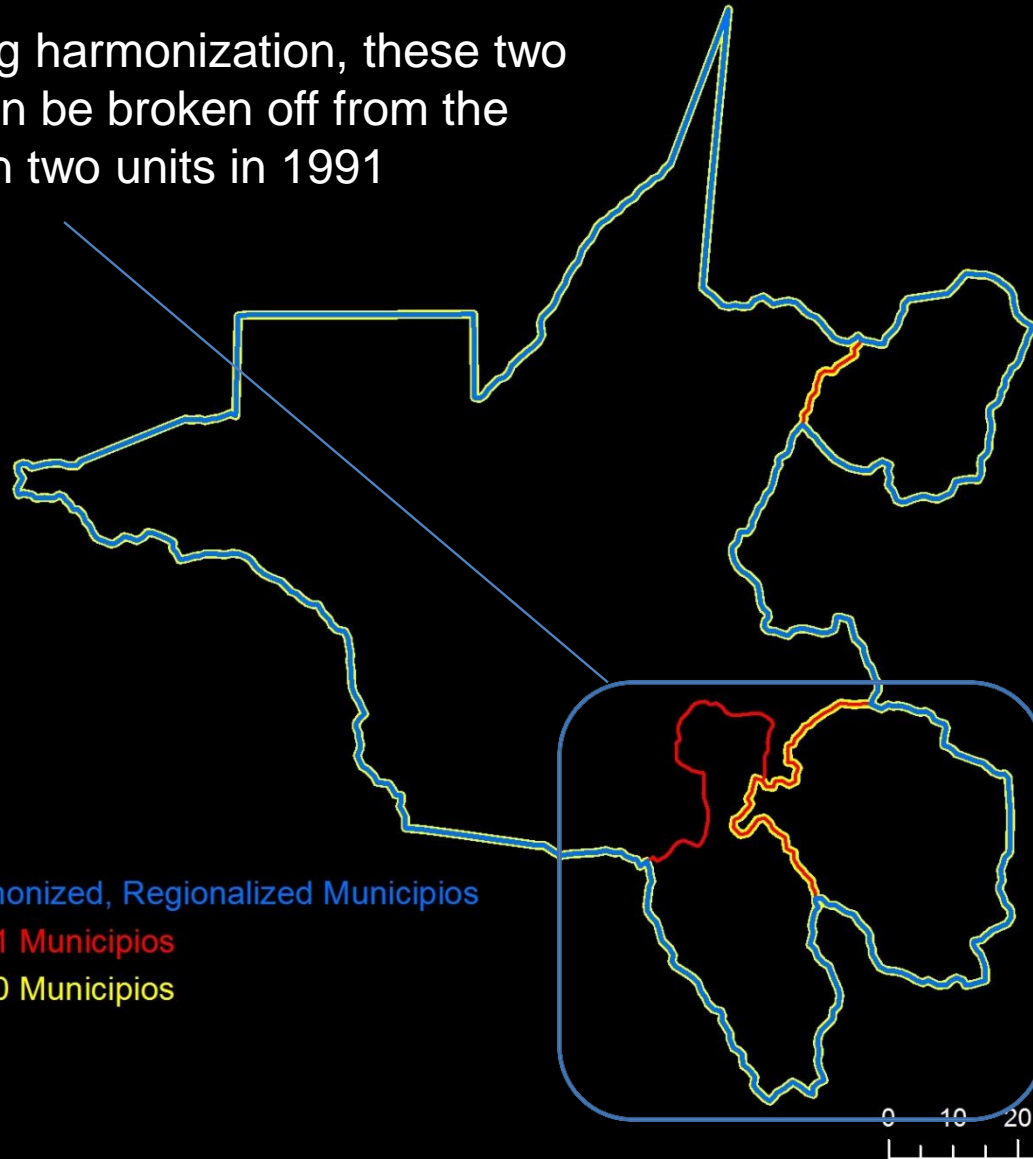
Regionalization



Year-Specific Units

Relaxing harmonization, these two units can be broken off from the northern two units in 1991

-  Harmonized, Regionalized Municipios
-  1991 Municipios
-  1980 Municipios



Types of Geographic Units

- Current types of geographic units in TerraPop
 - Harmonized, regionalized units
 - ✦ Consistent footprints over time
 - ✦ Minimum population $\geq 20,000$ persons (in most recent census)
 - Year-specific regionalized units
 - ✦ Subdivided harmonized, regionalized units for specific years
 - ✦ Nest within harmonized, regionalized units
 - ✦ Minimum population $\geq 20,000$ persons
 - Above types designed to match with geography on microdata



Harmonized

Geographic Level Selection

Tabulate on: ?

National
 First level
 Second level

Output will include data for harmonized units ?

		First Level	Second Level
Brazil	1960–2000	States (25)	Municipalities (1971)

Include data for available year-specific units ?

		First Level	Second Level
Brazil	1991	States (27)	Municipalities (2174)
Brazil	2000	States (27)	Municipalities (2252)

Continue



Year-Specific

Geographic Level Selection

Tabulate on: ?

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 First level
 Second level

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Continue



Geographic Level Selection



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- Second level

Output will include data for harmonized units ?

	First Level	Second Level
Brazil 1960–2000	States (25)	Municipalities (1971)

Include data for available year-specific units ?

	First Level	Second Level
Brazil 1991	States (27)	Municipalities (2174)
Brazil 2000	States (27)	Municipalities (2252)

Continue



Types of Geographic Units

- Future types of geographic units
 - For area-level extracts
 - Source units for a given census
 - ✦ e.g. All municipios from the Brazil 2000 census (~5,000 units)
 - ✦ Match geography in the summary census data or other data sources
 - Non-census units
 - ✦ Watershed
 - ✦ Ecological regions



Data Access System



[DEMO VIDEO](#) – MICRODATA EXTRACT