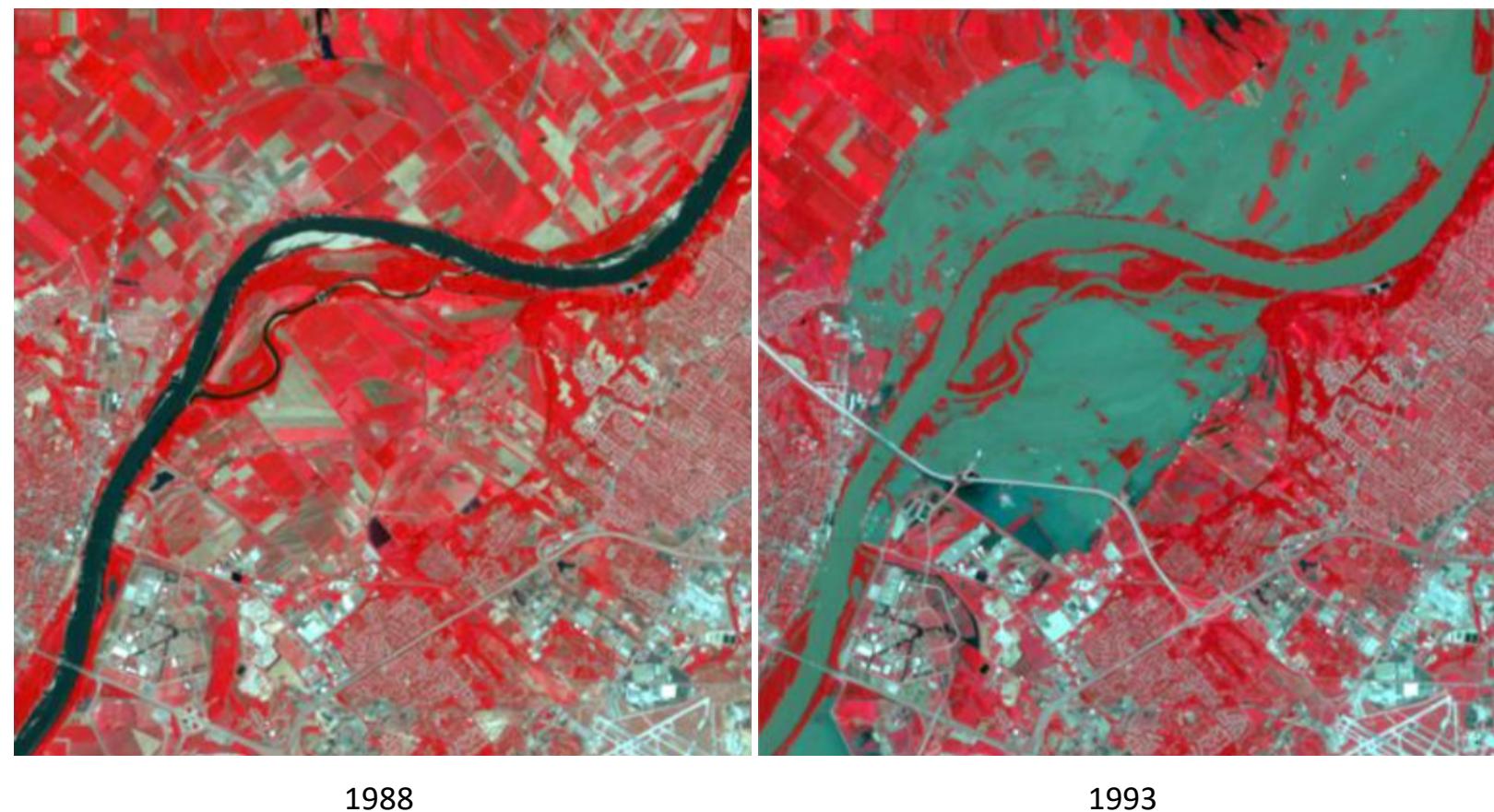
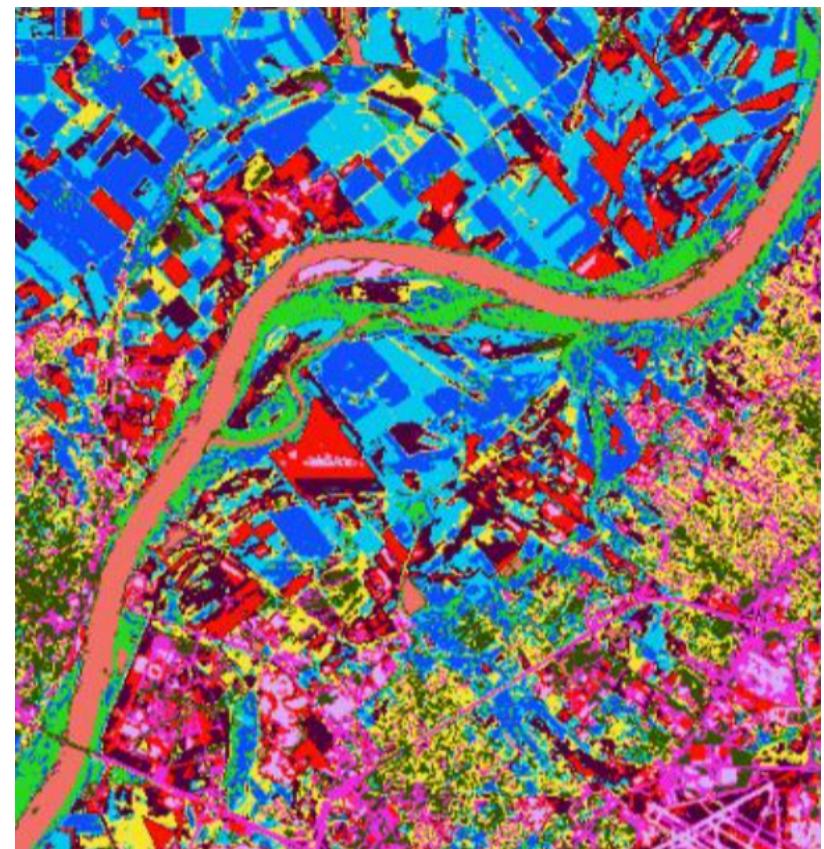


I ran an Iso Cluster Unsupervised Classification algorithm on each Landsat image, reclassified the resulting classes into classes that represented LULC using the Raster Reclassify tool, converted the reclassified images into vector layers using Raster to Polygon tool and then combined the two vector layers using the Union tool.

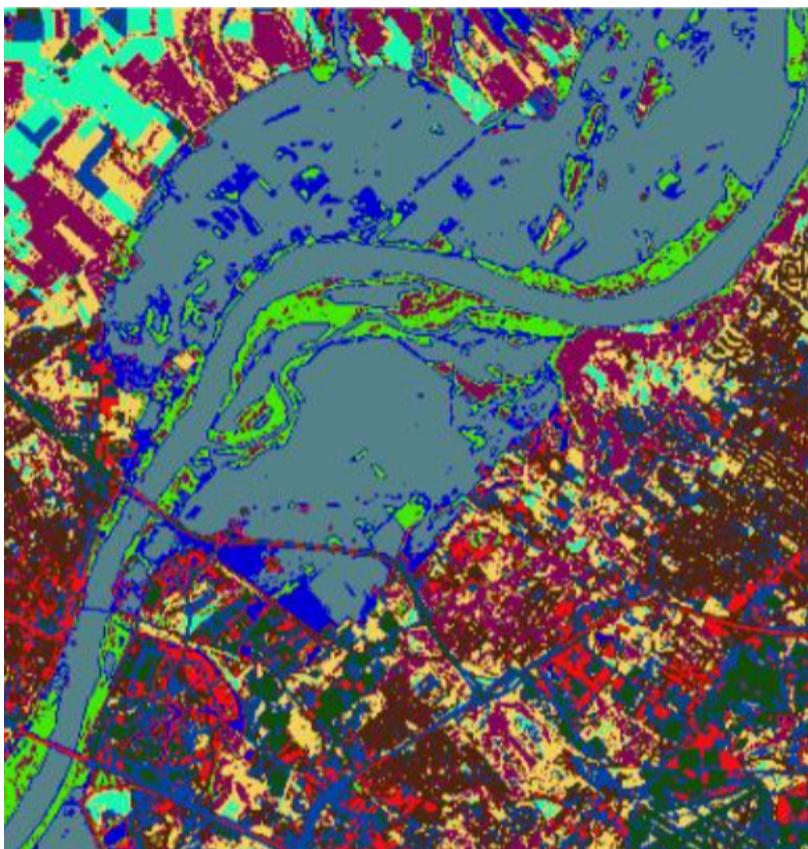
### Landsat TM images of the Mississippi River



## Images after Unsupervised Classification

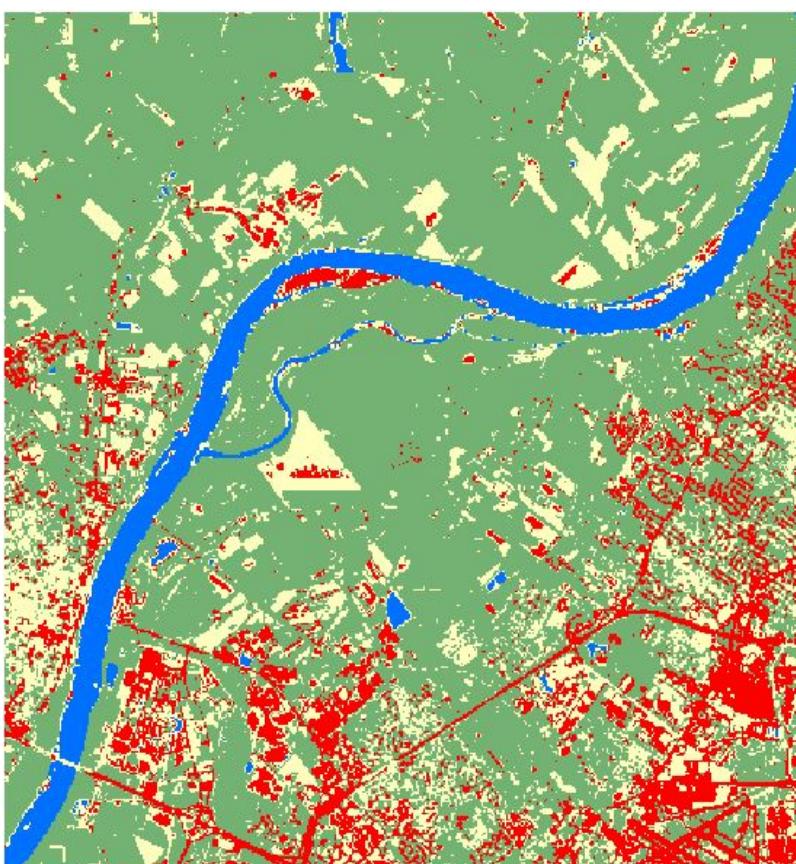


1988

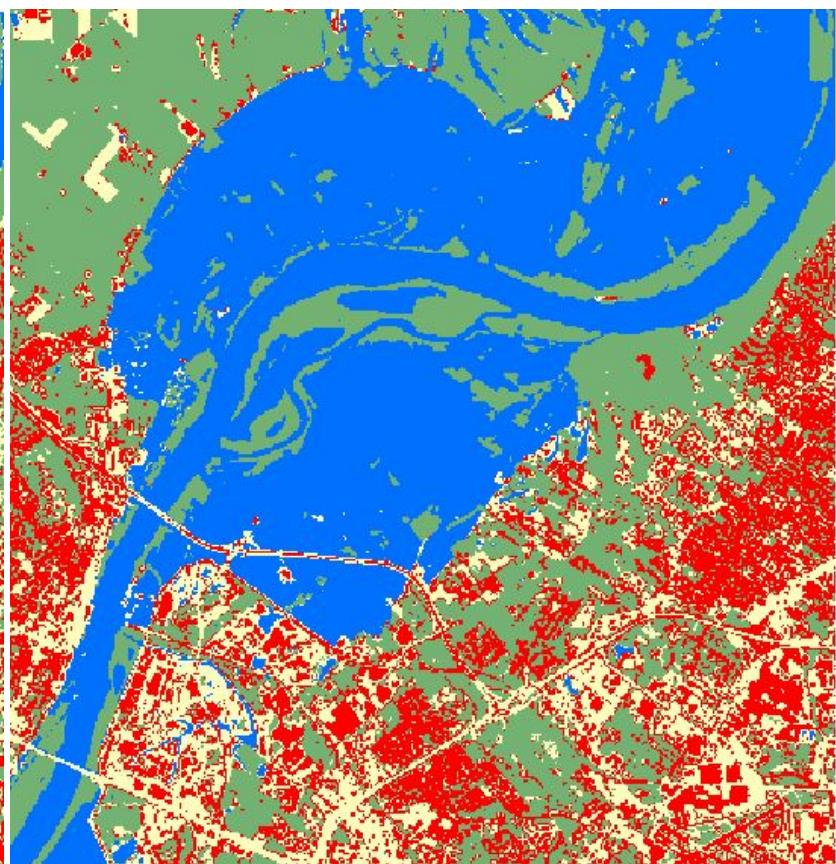


1993

## Images after Raster Reclassification



1988



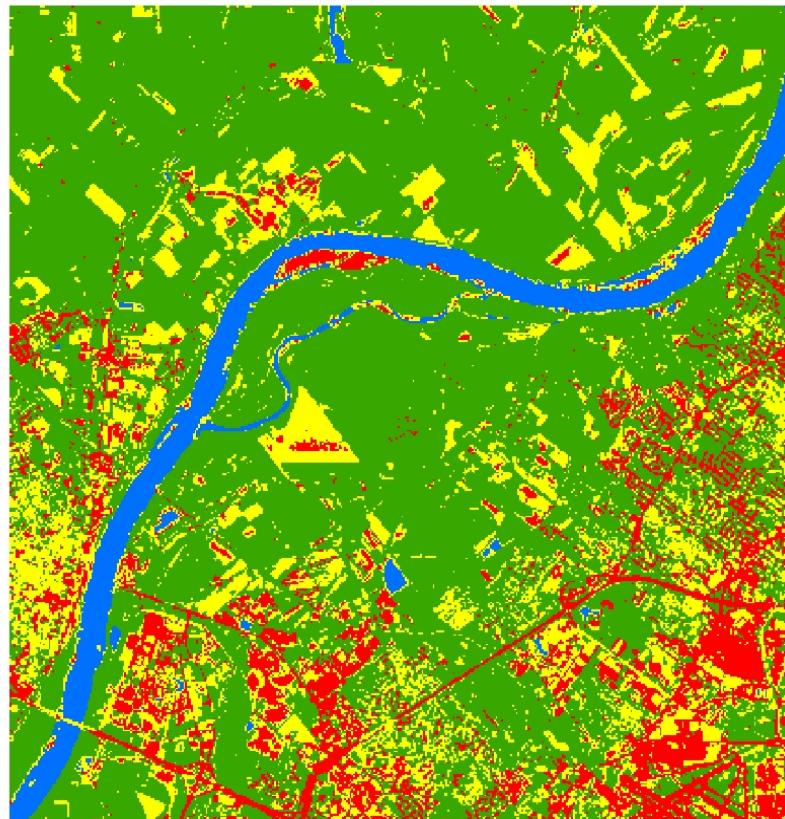
1993

Table 1: General Changes of LULC Area between 1988 – 1993 (Sq. Mi.)

Class	1988	1993	Area difference
Vegetation	8658289.2	58474593	-55319724.9
Water	105360061.8	51040337	49816304.3
Bare soil (mix)	28915646.3	23388960	-5526685.9
Urban	19000160.6	30030307	11030146.1

## Maps of LULC before and after Flooding

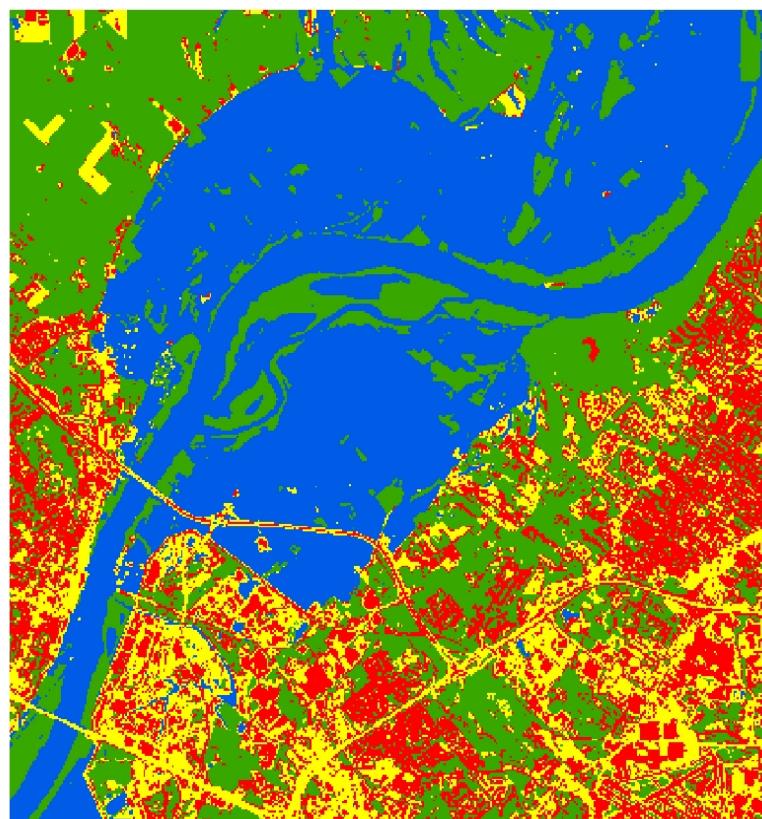
Land Cover 1988  
(Ryan Whalen)



Coordinate System: WGS 1984 UTM Zone 15N  
Projection: Transverse Mercator  
Datum: WGS 1984  
False Easting: 500,000.0000  
False Northing: 0.0000  
Central Meridian: -93.0000  
Scale Factor: 0.9996  
Latitude Of Origin: 0.0000  
Units: Meter

**Legend**  
■ Water  
■ Vegetation  
■ Bare Soil  
■ Urban

Land Cover 1993  
(Ryan Whalen)



Coordinate System: WGS 1984 UTM Zone 15N  
Projection: Transverse Mercator  
Datum: WGS 1984  
False Easting: 500,000.0000  
False Northing: 0.0000  
Central Meridian: -93.0000  
Scale Factor: 0.9996  
Latitude Of Origin: 0.0000  
Units: Meter

**Legend**  
■ Water  
■ Vegetation  
■ Bare Soil  
■ Urban

Table 2: Area of Land Type not changed by Flood (Sq. Mi)

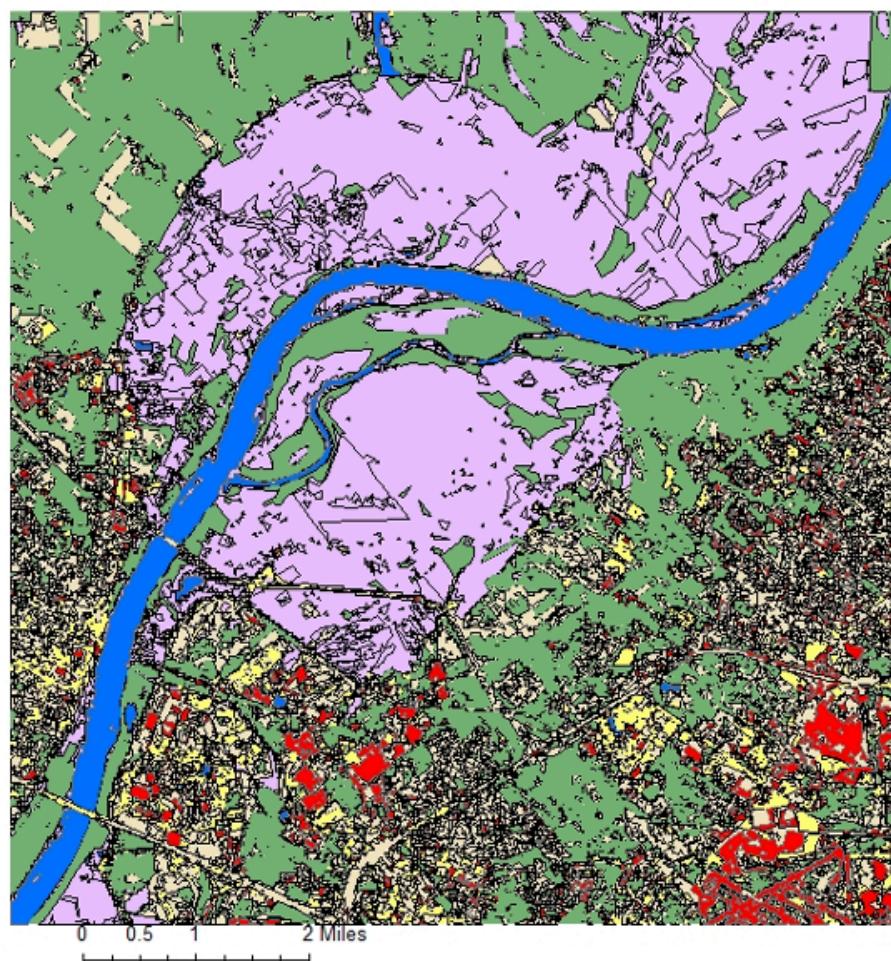
Class	1988	1993	Area difference
Vegetation	105302700	51070500	-54232200
Water	8619300	58331700	40712400
Bare soil (mix)	29925900	23499000	-6426900
Urban	19086300	30033000	10946700

Table 3: Area of Land Types Changed by Flood

No	Changes in Land types	Coverage (sq m)
1	Vegetation to water	38823729.9
2	Bare soil to water	9446571.4
3	Urban to water	1761384.3
	Total flooded area	137252512.3

## Map of Flooded Areas

Flooded Area  
(Ryan Whalen)



- █ Vegetation
- █ Water
- █ Bare Soil
- █ Urban
- █ Flood Area
- █ Other Changes



Coordinate System: WGS 1984 UTM Zone 15N  
Projection: Transverse Mercator  
Datum: WGS 1984  
False Easting: 500,000.0000  
False Northing: 0.0000  
Central Meridian: -93.0000  
Scale Factor: 0.9996  
Latitude Of Origin: 0.0000  
Units: Meter