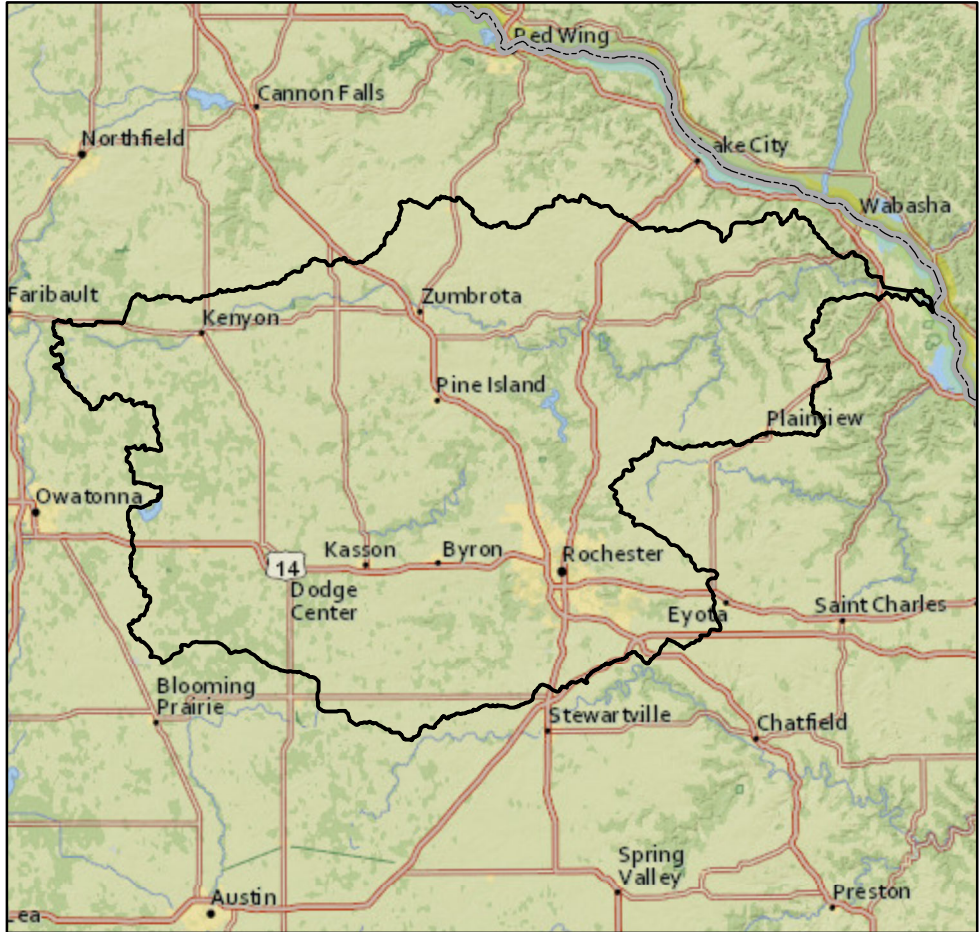




## Watershed Report Card: **Zumbro River**



### People and Places:

#### Watershed Population:

2000 census - 149,229  
 2010 census - 171,421

#### Largest Cities - Population:

Rochester - 106,769  
 Kasson - 5,931  
 Byron - 4,914  
 Marion - 3,653  
 Plainview - 3,340

#### Counties - % of watershed:

Olmsted - 26 %  
 Dodge - 26 %  
 Wabasha - 24 %  
 Goodhue - 19 %  
 Rice - 3 %  
 Steele - 2 %  
 Mower - 0 %

### Watershed Area:

#### Watershed size:

909,366 acres  
 1,421 square miles

#### Watershed Surface Area:

Percent Land - 100 %  
 Percent Water - 0 %

#### HUC8 ID:

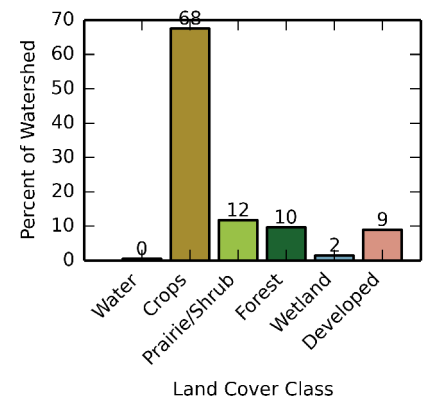
07040004

#### Basin Name:

Upper-Mississippi -  
 Black/Plum (0704)

### Land Use:

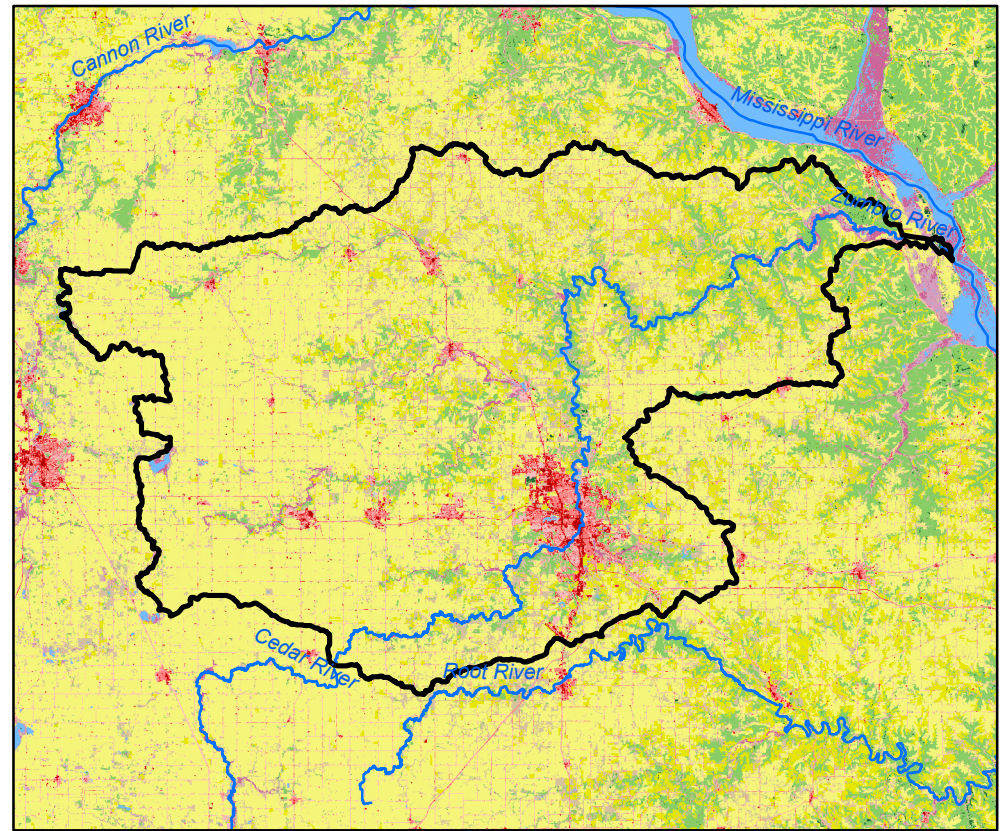
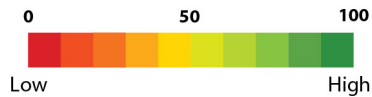
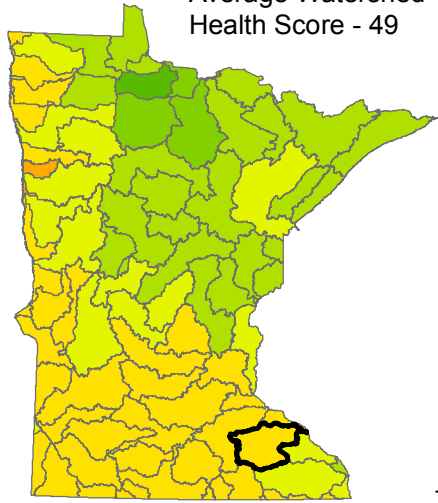
#### Percent of watershed area by land cover type:



# Watershed Health Report - Major Watershed

## Zumbro River

Average Watershed Health Score - 49



These health scores are calculated at the Major Watershed (HUC8) scale. Health score names followed by (\*) are also calculated at the DNR Catchment scale (subdivided HUC12). Those results are reported on the following pages.



### Hydrology

Component Health Score (index average) 69

#### Index Scores

Perennial Cover*	35
Impervious Cover*	47
Water Withdrawal*	99
Flow Variability	69
Hydrologic Storage	62
<b>Sub-Scores</b>	
Altered Streams*	93
Surface Storage	31



### Geomorphology

Component Health Score (index average) 50

#### Index Scores

Soil Erosion Potential*	53
Groundwater Susceptibility	24
Climate Vulnerability	74



### Biology

Component Health Score (index average) 44

#### Index Scores

Terrestrial Habitat Quality*	10
Stream Species Quality*	68
Species Richness	60
At-Risk Species Richness	39



### Connectivity

Component Health Score (index average) 31

#### Index Scores

Terrestrial Habitat Connectivity	18
Aquatic Connectivity*	25
Riparian Connectivity*	68



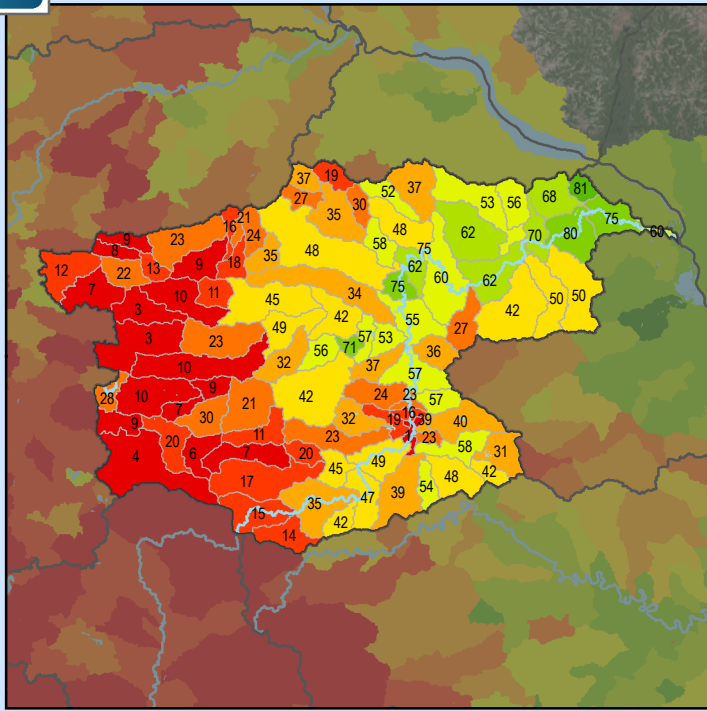
### Water Quality

Component Health Score (index average) 53

#### Index Scores

Non-Point Pollution Sources	29
<b>Sub-Score</b>	
Phosphorus Risk*	19
Localized Pollution Sources*	79
Assessments	49

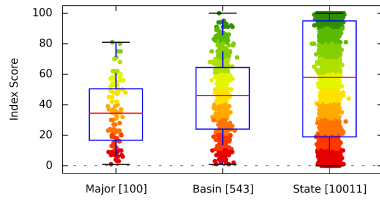
### Perennial Cover (2011)



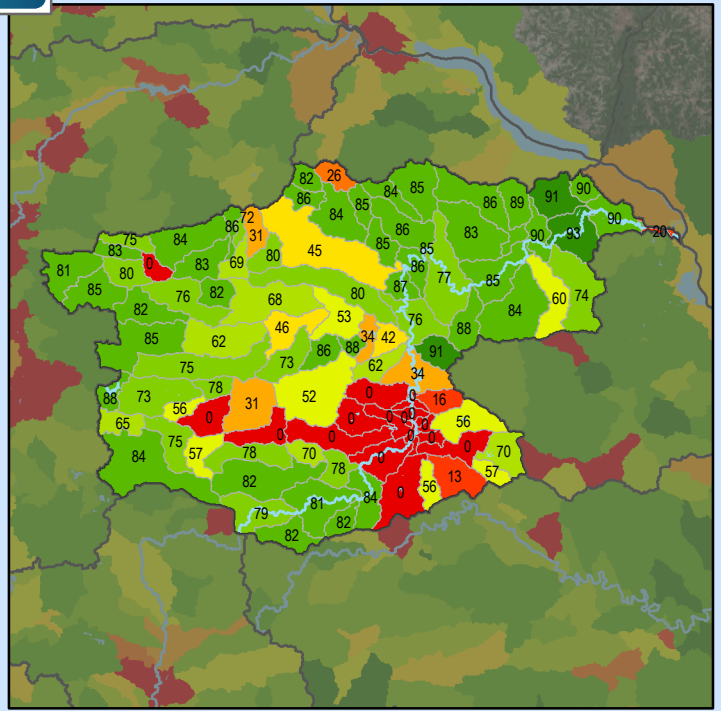
#### Health Score Distributions:

Zumbro River

Min: 1  
 Max: 81  
 Median: 34.5  
 Mean: 34.63  
 Standard Dev: 20.9



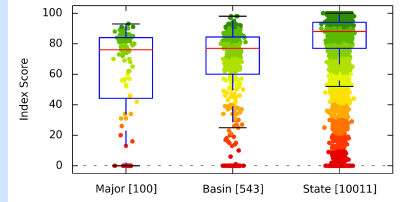
### Impervious Cover (2011)



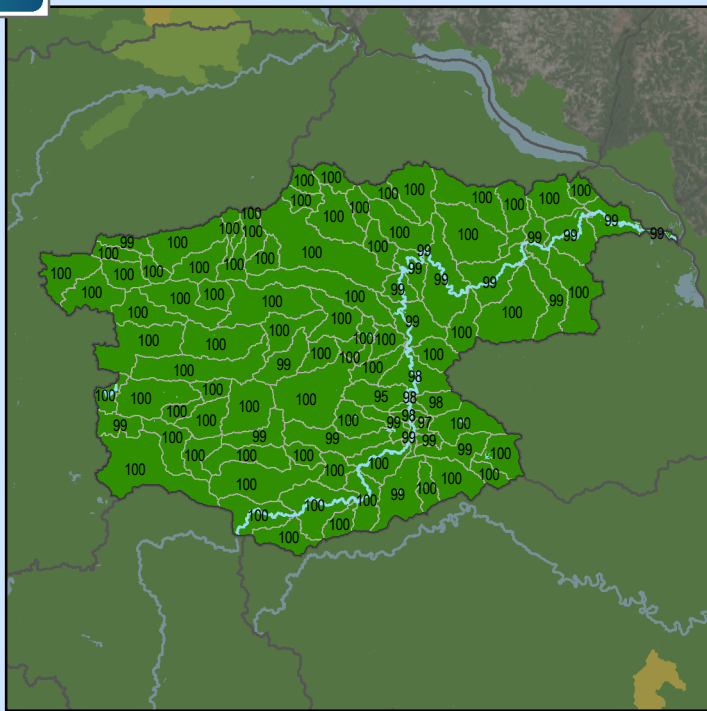
#### Health Score Distributions:

Zumbro River

Min: 0  
 Max: 93  
 Median: 76.0  
 Mean: 60.53  
 Standard Dev: 31.68



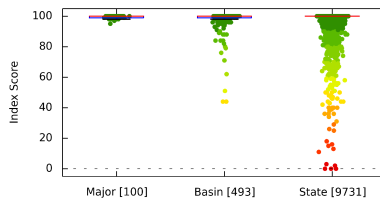
### Water Withdrawal Index



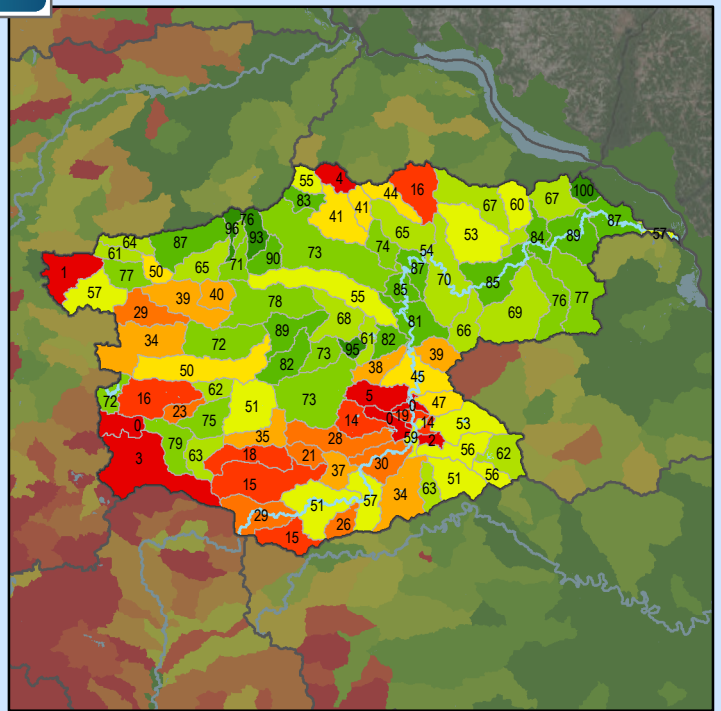
#### Health Score Distributions:

Zumbro River

Min: 95  
 Max: 100  
 Median: 100.0  
 Mean: 99.62  
 Standard Dev: 0.76



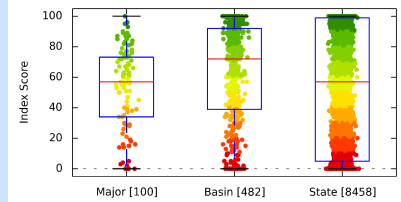
### Altered Streams



#### Health Score Distributions:

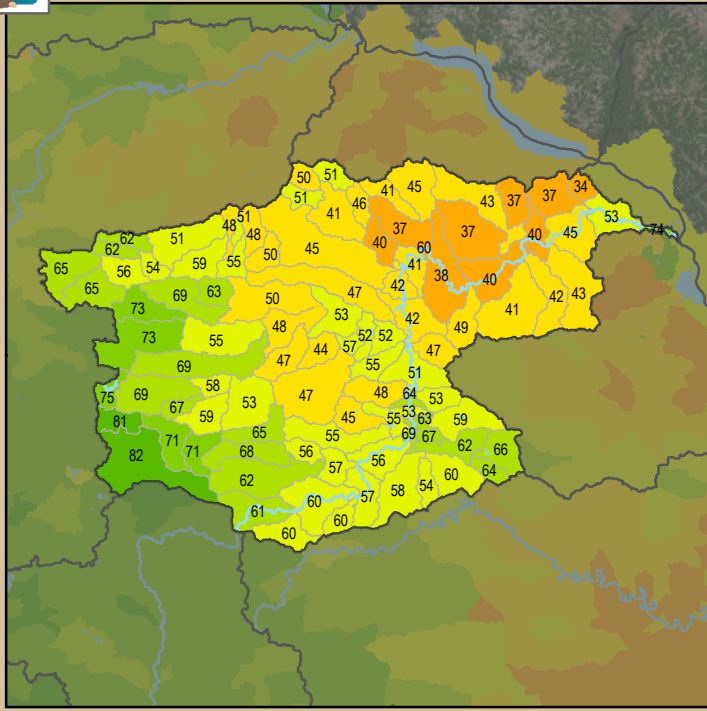
Zumbro River

Min: 0  
 Max: 100  
 Median: 57.0  
 Mean: 52.81  
 Standard Dev: 26.95



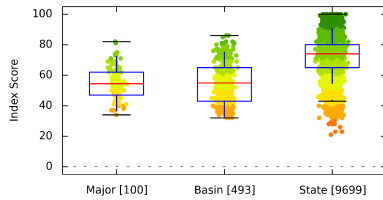


### Soil Erosion Potential

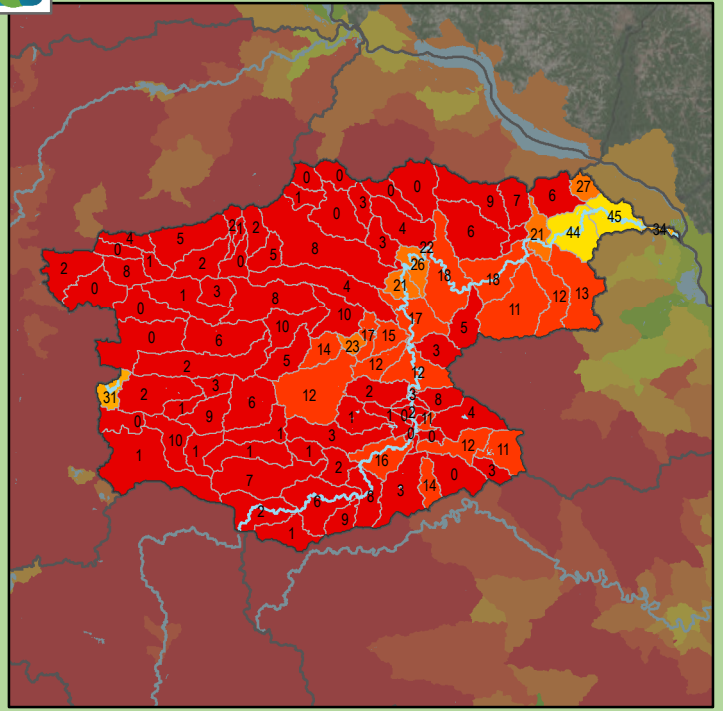


#### Health Score Distributions:

Zumbro River  
 Min: 34  
 Max: 82  
 Median: 54.5  
 Mean: 54.7  
 Standard Dev: 10.66

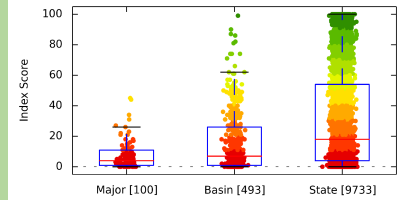


### Terrestrial Habitat Quality

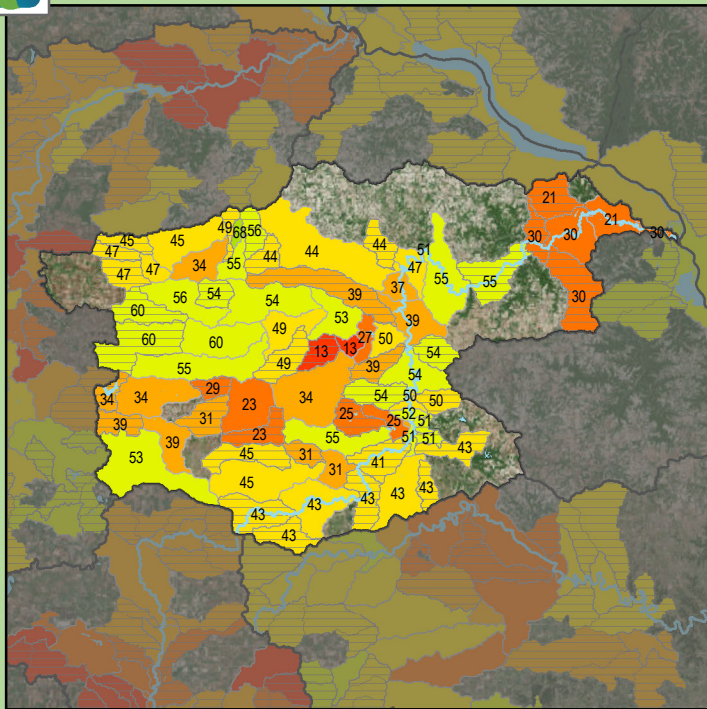


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 45  
 Median: 4.0  
 Mean: 7.66  
 Standard Dev: 9.11

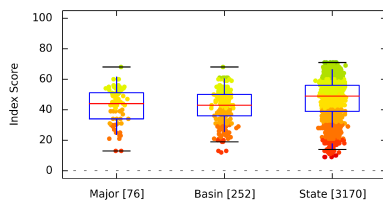


### Stream Species Quality - Mussel Score

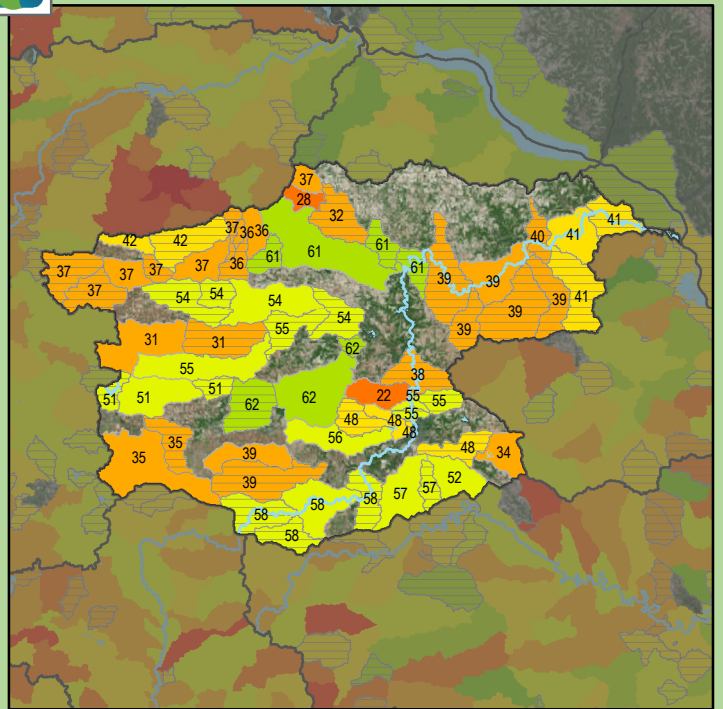


#### Health Score Distributions:

Zumbro River  
 Min: 13  
 Max: 68  
 Median: 44.0  
 Mean: 42.72  
 Standard Dev: 11.62

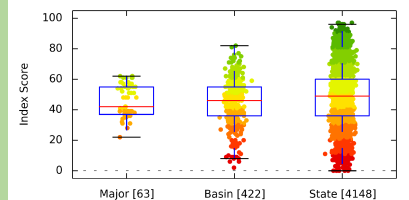


### Stream Species Quality - Aquatic Invertebrate IBI

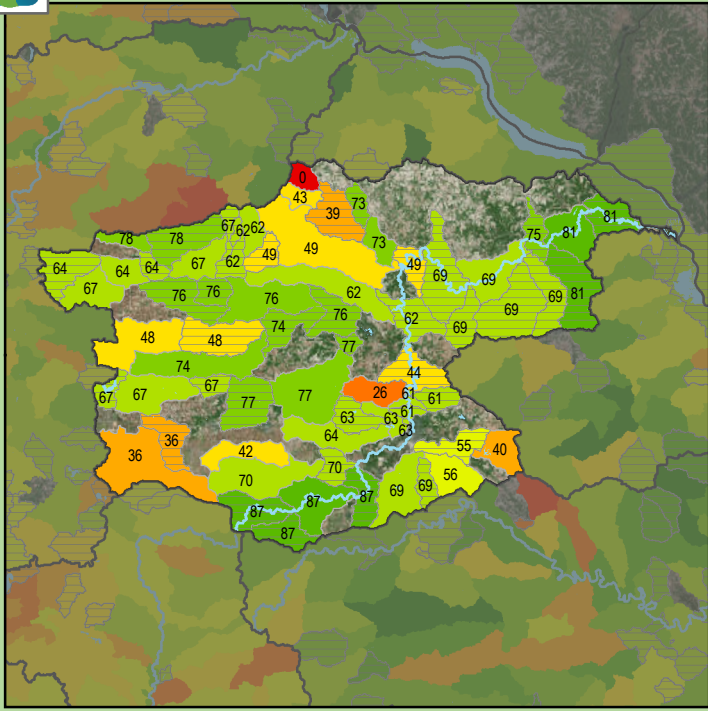


#### Health Score Distributions:

Zumbro River  
 Min: 22  
 Max: 62  
 Median: 42.0  
 Mean: 45.92  
 Standard Dev: 10.33

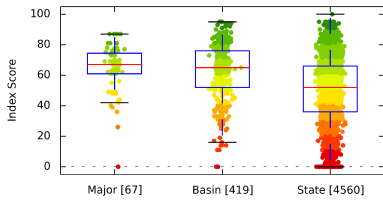


### Stream Species Quality - Fish IBI

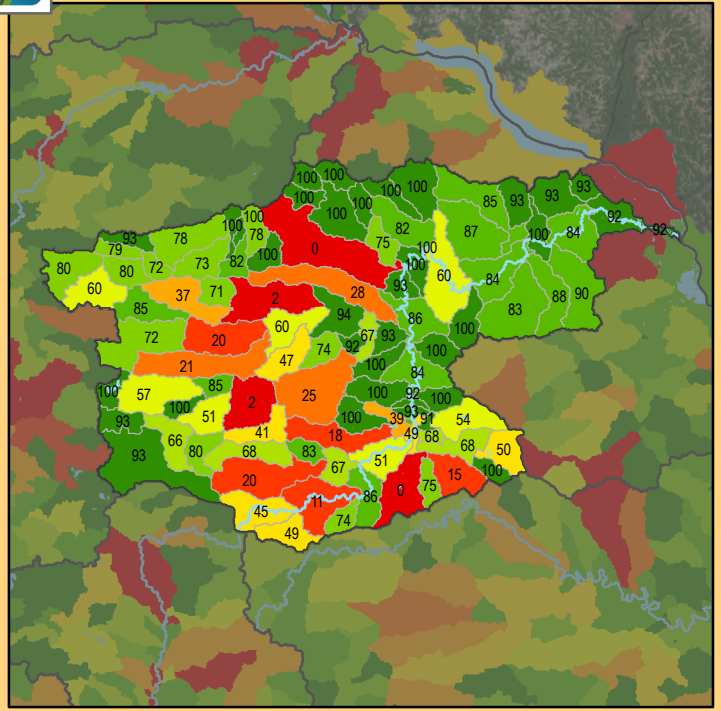


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 87  
 Median: 67.0  
 Mean: 63.79  
 Standard Dev: 15.58

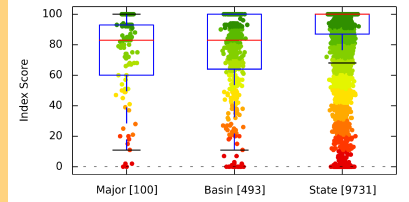


### Aquatic Connectivity

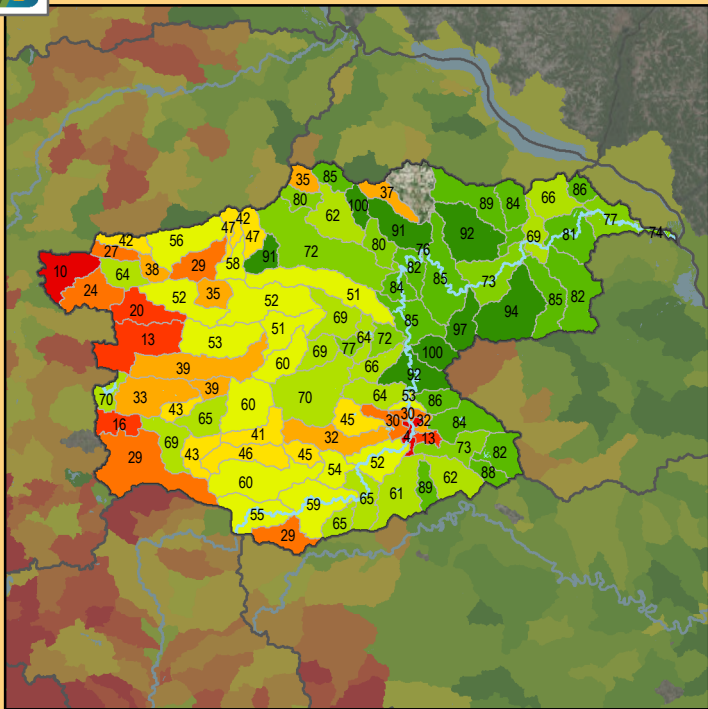


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 100  
 Median: 83.0  
 Mean: 73.24  
 Standard Dev: 27.74

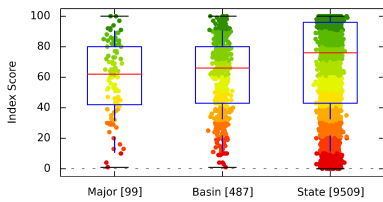


### Riparian Connectivity

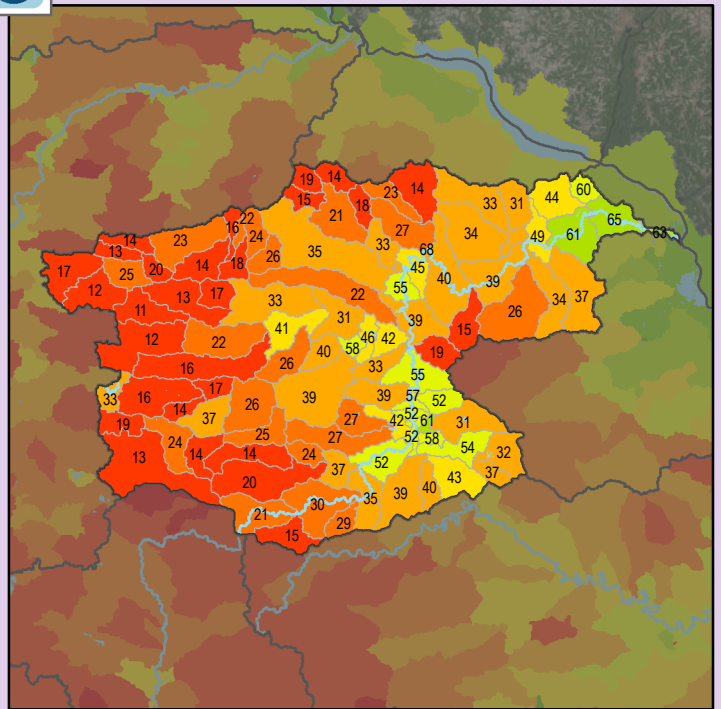


#### Health Score Distributions:

Zumbro River  
 Min: 1  
 Max: 100  
 Median: 62.0  
 Mean: 59.09  
 Standard Dev: 23.66

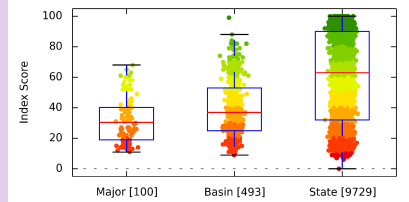


### Non-Point Source - Phosphorus Risk



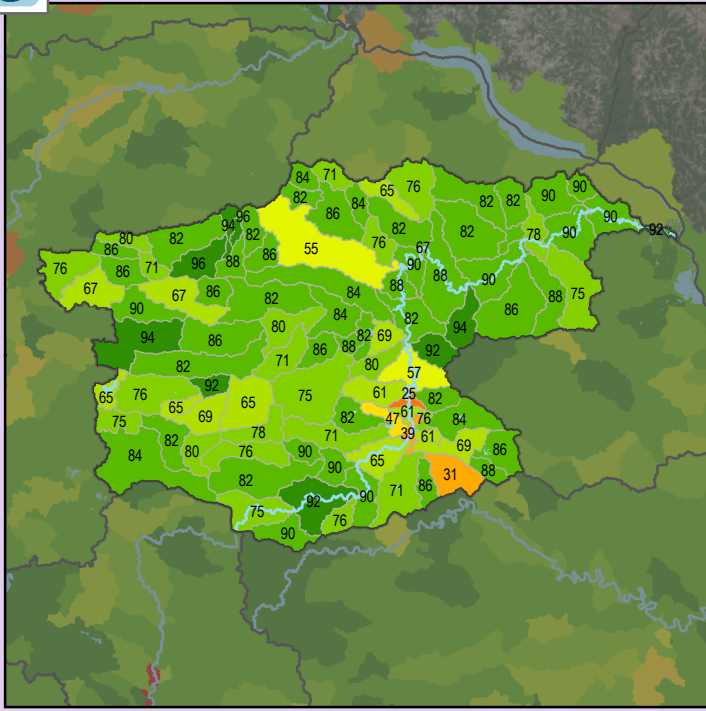
#### Health Score Distributions:

Zumbro River  
 Min: 11  
 Max: 68  
 Median: 30.5  
 Mean: 31.87  
 Standard Dev: 14.97



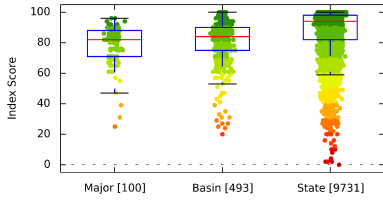


### Localized Pollution Sources

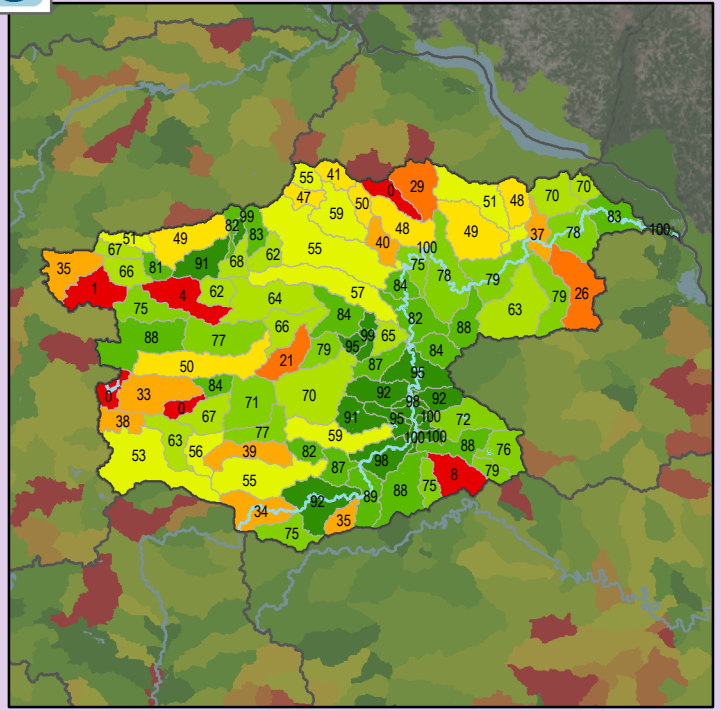


#### Health Score Distributions:

Zumbro River  
 Min: 25  
 Max: 96  
 Median: 82.0  
 Mean: 78.52  
 Standard Dev: 12.94

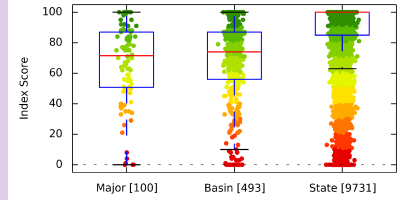


### Localized Pollution Sources - Animal Units

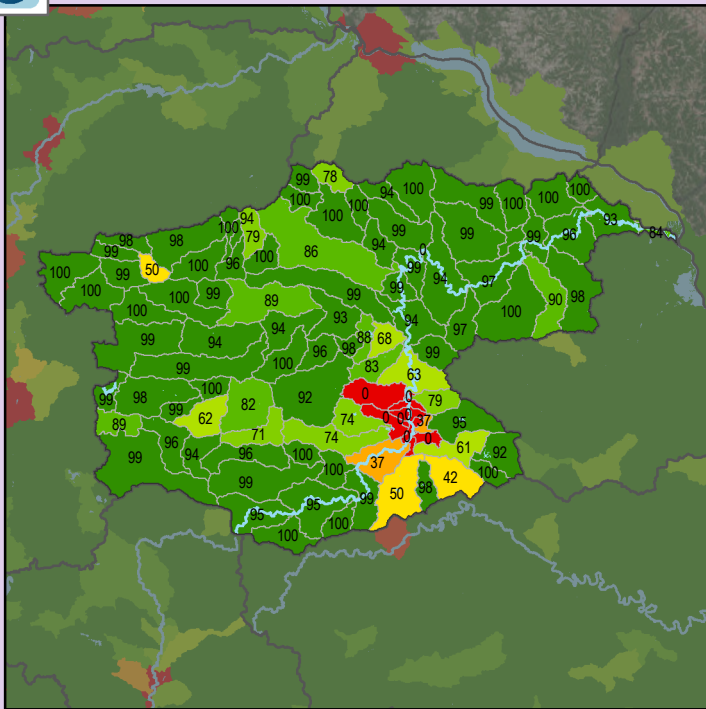


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 100  
 Median: 71.5  
 Mean: 66.62  
 Standard Dev: 25.81

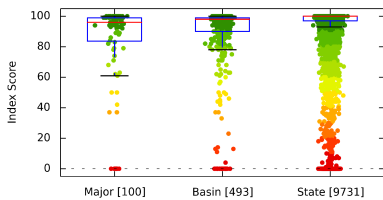


### Localized Pollution Sources - Potential Contaminants

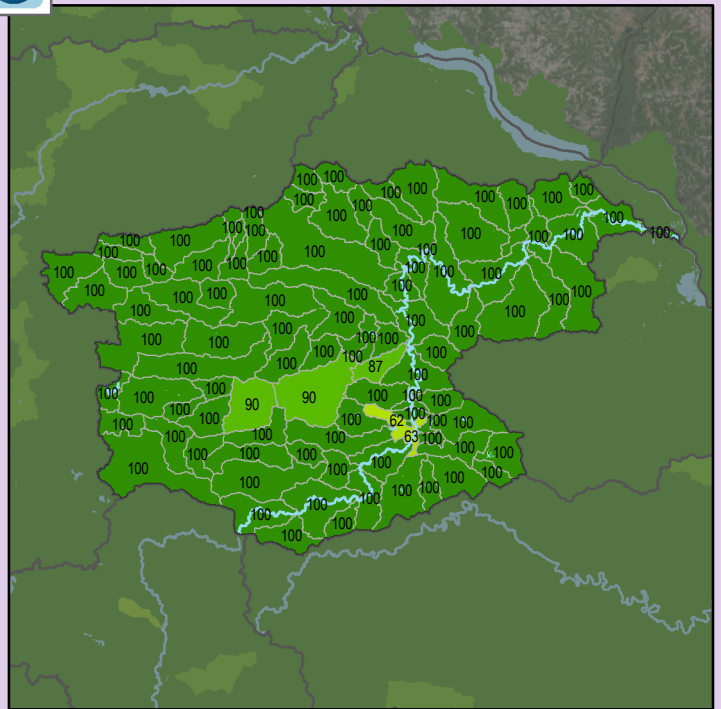


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 100  
 Median: 96.0  
 Mean: 83.66  
 Standard Dev: 28.43

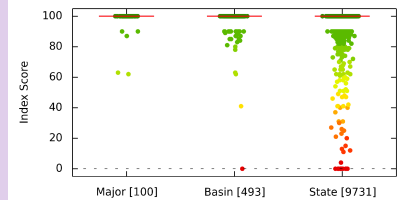


### Localized Pollution Sources - Superfund Sites



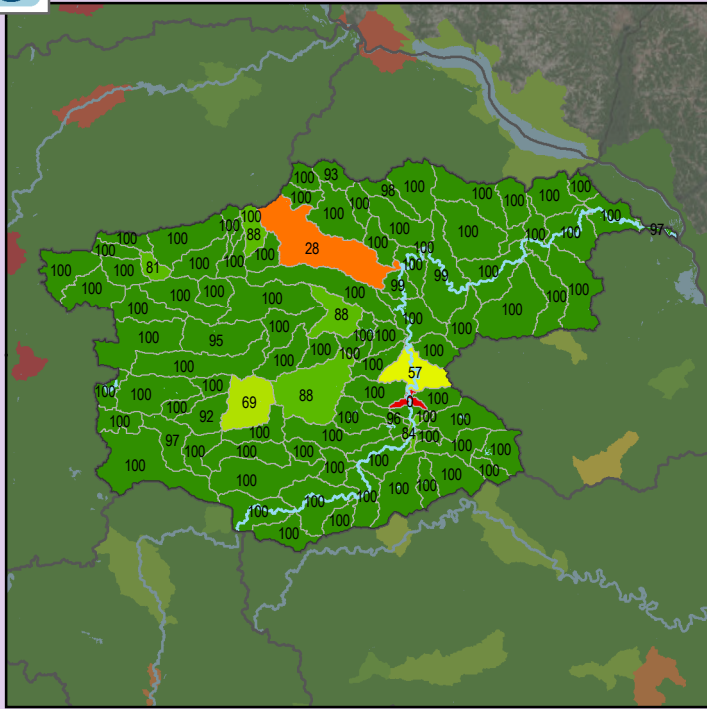
#### Health Score Distributions:

Zumbro River  
 Min: 62  
 Max: 100  
 Median: 100.0  
 Mean: 98.92  
 Standard Dev: 5.54



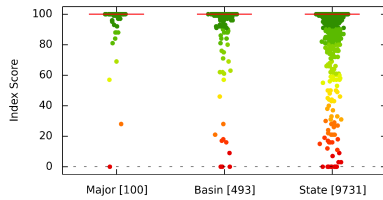


### Localized Pollution Sources - Wastewater Treatment

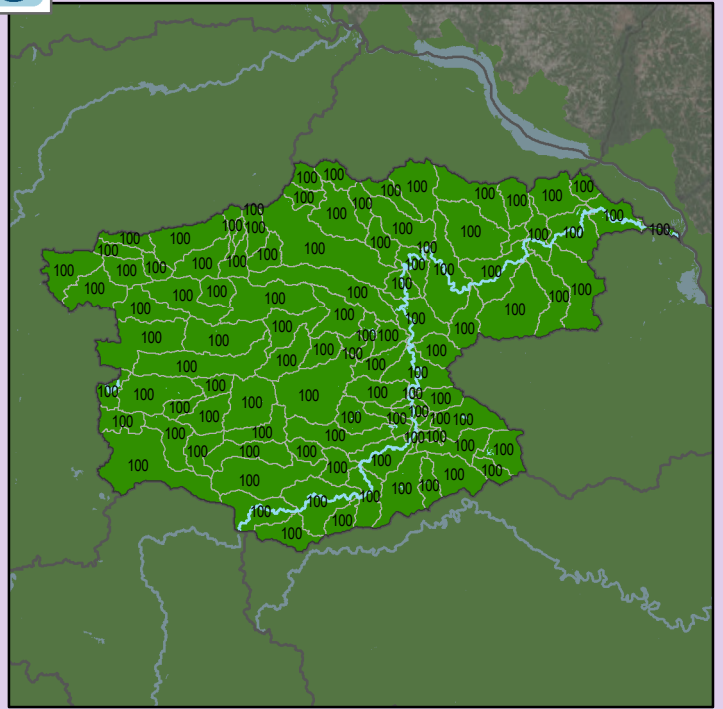


#### Health Score Distributions:

Zumbro River  
 Min: 0  
 Max: 100  
 Median: 100.0  
 Mean: 96.49  
 Standard Dev: 13.41

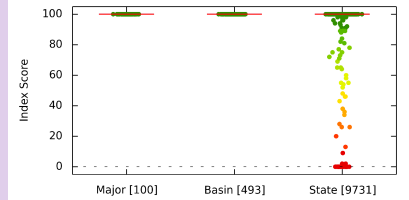


### Localized Pollution Sources - Open Pit Mines

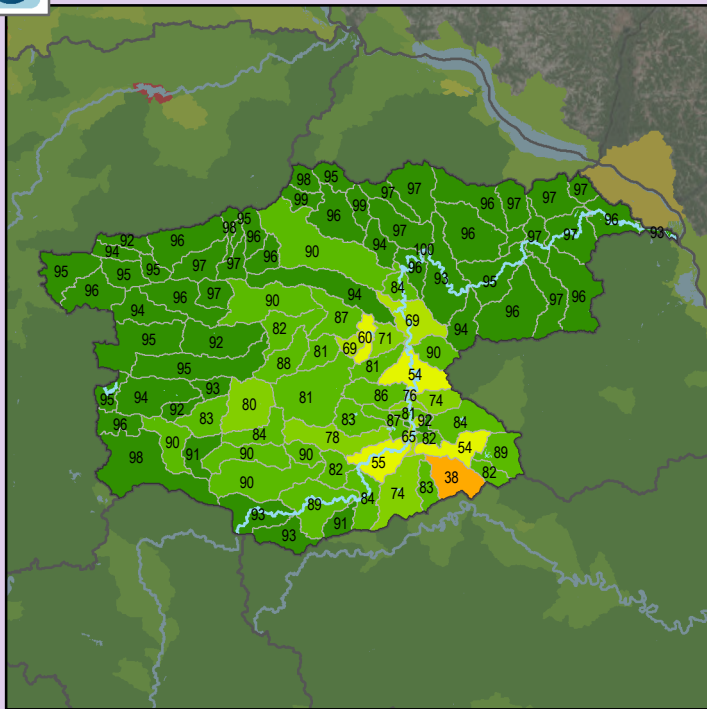


#### Health Score Distributions:

Zumbro River  
 Min: 100  
 Max: 100  
 Median: 100.0  
 Mean: 100.0  
 Standard Dev: 0.0



### Localized Pollution Sources - Septic Systems



#### Health Score Distributions:

Zumbro River  
 Min: 38  
 Max: 100  
 Median: 93.0  
 Mean: 88.41  
 Standard Dev: 11.31

