



## Watershed Report Card: **Leech Lake River**



### People and Places:

#### Watershed Population:

2000 census - 12,783  
 2010 census - 13,157

#### Largest Cities - Population:

Walker - 941  
 Guthrie - 555  
 Wilkinson - 401  
 Wabedo - 341  
 Hackensack - 313

#### Counties - % of watershed:

Cass - 80 %  
 Hubbard - 20 %  
 Beltrami - 0 %

### Watershed Area:

#### Watershed size:

857,971 acres  
 1,341 square miles

#### Watershed Surface Area:

Percent Land - 81 %  
 Percent Water - 19 %

#### HUC8 ID:

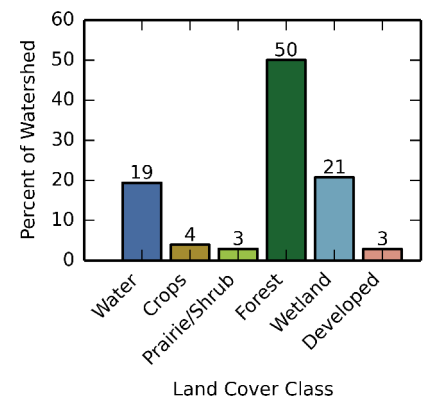
07010102

#### Basin Name:

Mississippi Headwaters (0701)

### Land Use:

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

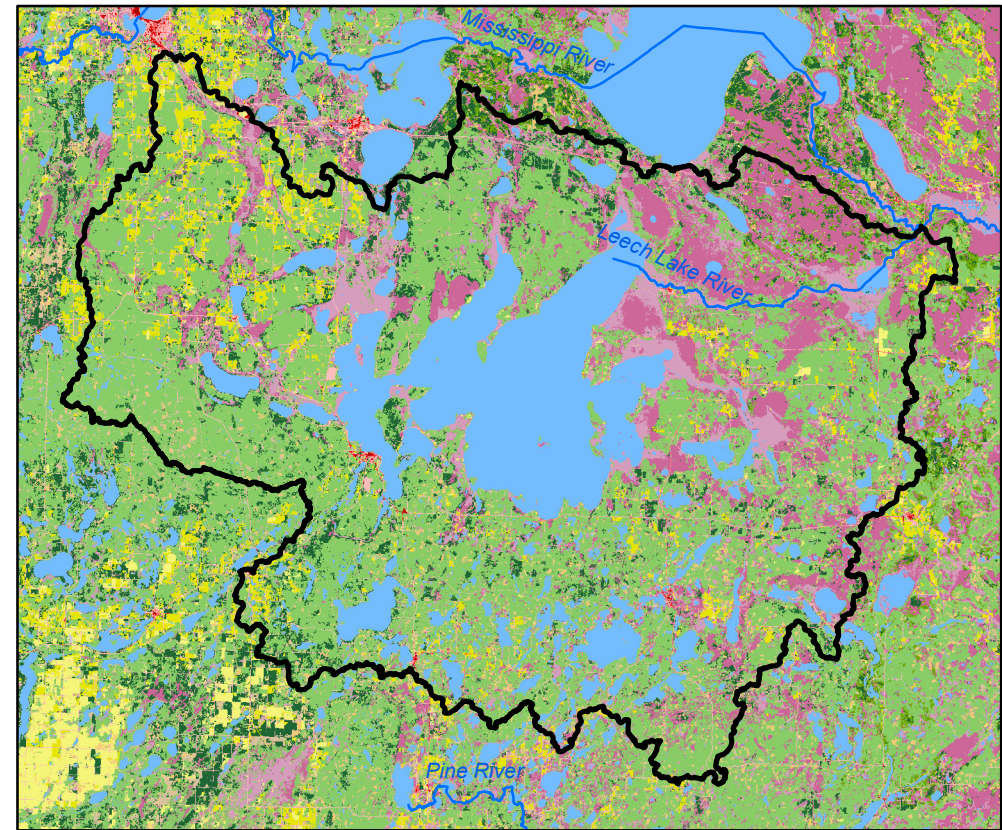
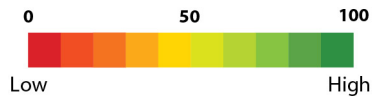
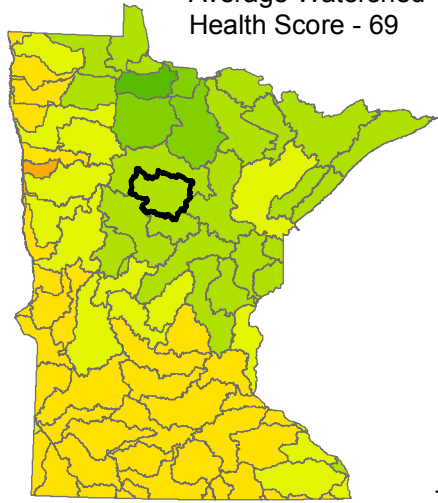




# Watershed Health Report - Major Watershed

## Leech Lake River

Average Watershed Health Score - 69



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) 92

#### Index Scores

Perennial Cover*	96
Impervious Cover*	88
Water Withdrawal*	99
Flow Variability	76
Hydrologic Storage	92
<b>Sub-Scores</b>	
Altered Streams*	85
Surface Storage	98



### Geomorphology

Component Health Score (index average) 62

#### Index Scores

Soil Erosion Potential*	73
Groundwater Susceptibility	34
Climate Vulnerability	79



### Biology

Component Health Score (index average) 46

#### Index Scores

Terrestrial Habitat Quality*	37
Stream Species Quality*	58
Species Richness	61
At-Risk Species Richness	30



### Connectivity

Component Health Score (index average) 54

#### Index Scores

Terrestrial Habitat Connectivity	41
Aquatic Connectivity*	76
Riparian Connectivity*	97



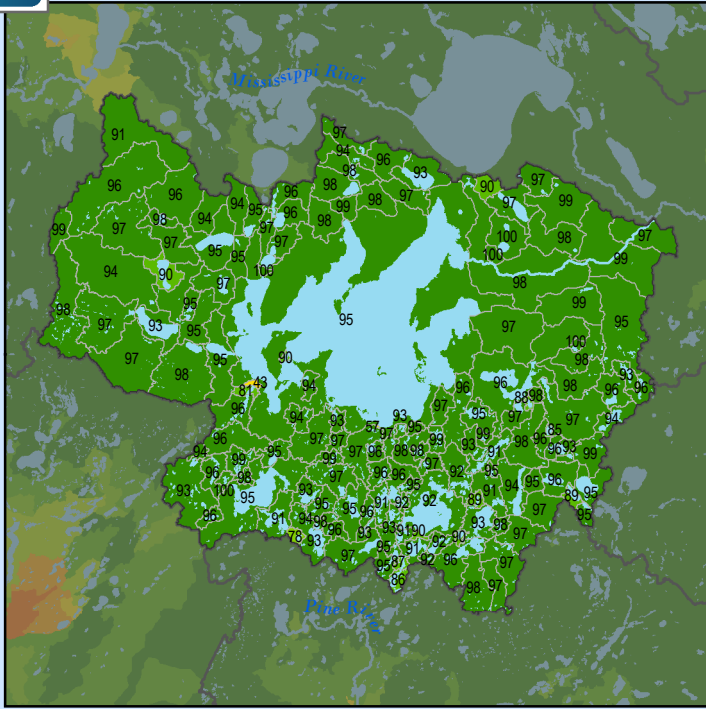
### Water Quality

Component Health Score (index average) 89

#### Index Scores

Non-Point Pollution Sources	91
<b>Sub-Score</b>	
Phosphorus Risk*	89
Localized Pollution Sources*	92
Assessments	76

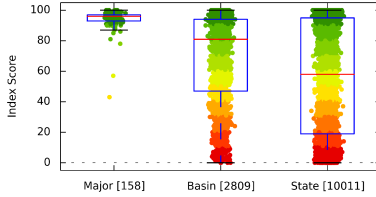
### Perennial Cover (2011)



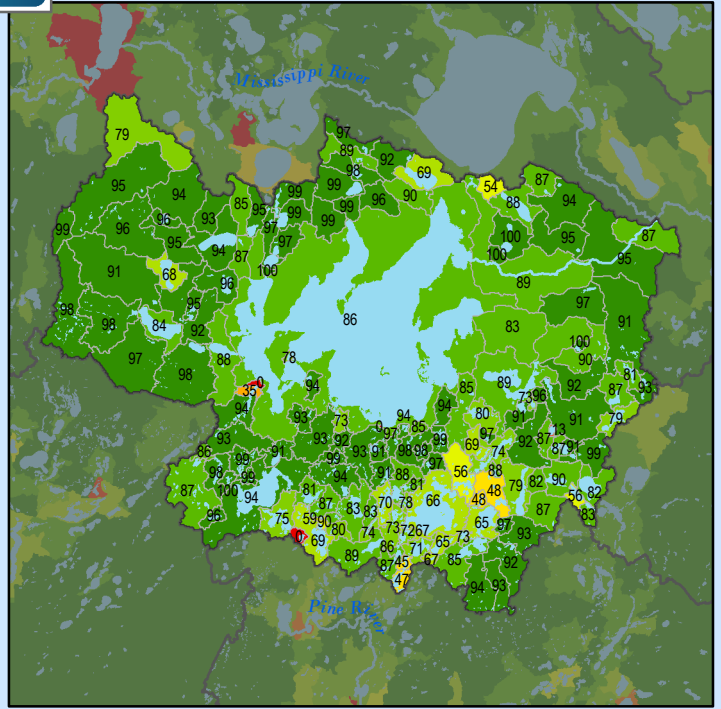
#### Health Score Distributions:

Leech Lake River

Min: 43  
 Max: 100  
 Median: 96.0  
 Mean: 94.56  
 Standard Dev: 6.15



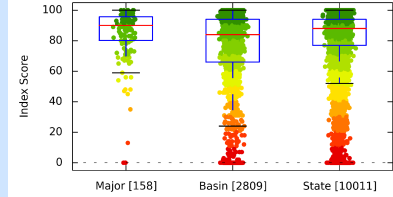
### Impervious Cover (2011)



#### Health Score Distributions:

Leech Lake River

Min: 0  
 Max: 100  
 Median: 90.0  
 Mean: 84.34  
 Standard Dev: 18.32



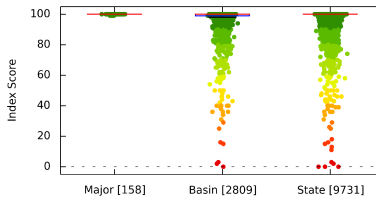
### Water Withdrawal Index



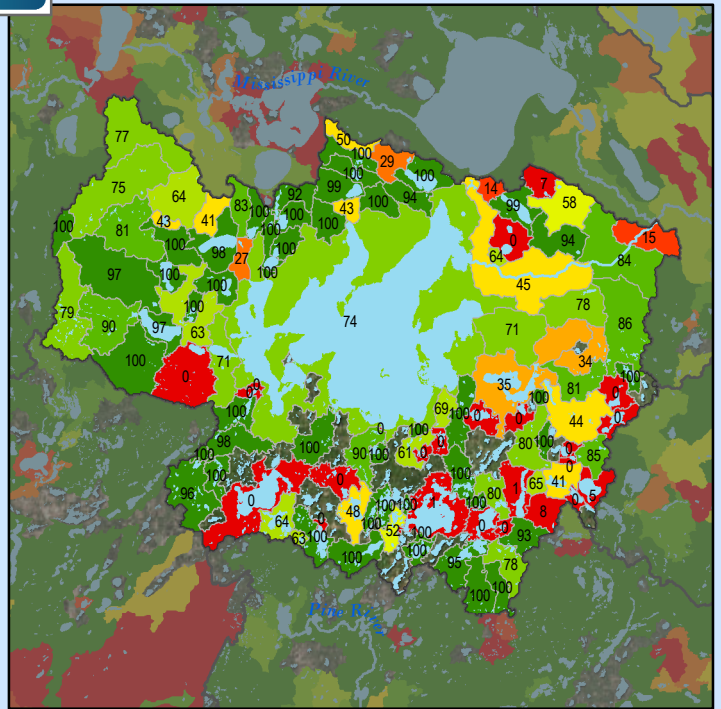
#### Health Score Distributions:

Leech Lake River

Min: 99  
 Max: 100  
 Median: 100.0  
 Mean: 99.97  
 Standard Dev: 0.18



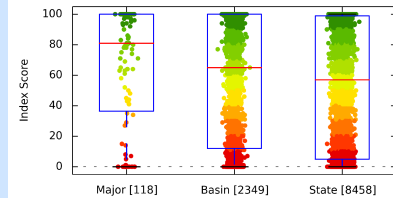
### Altered Streams



#### Health Score Distributions:

Leech Lake River

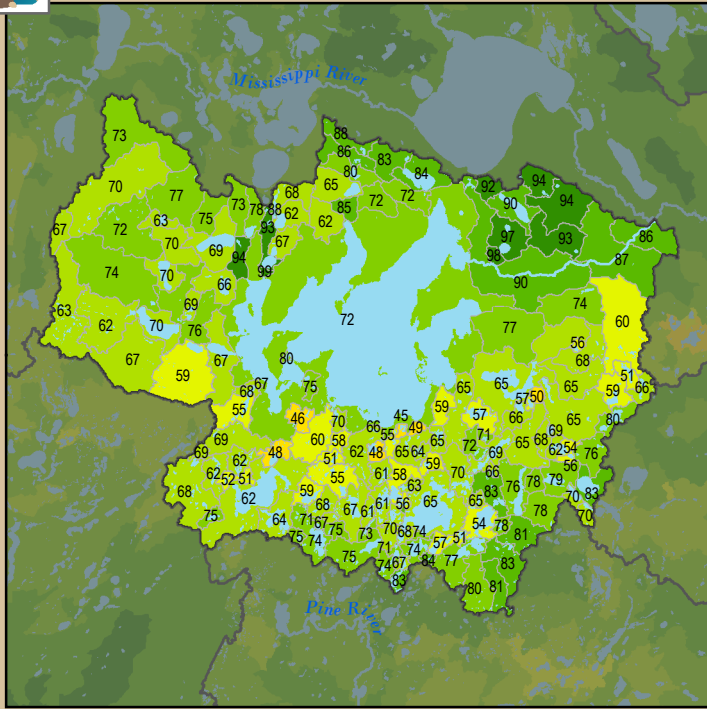
Min: 0  
 Max: 100  
 Median: 81.0  
 Mean: 65.67  
 Standard Dev: 38.77







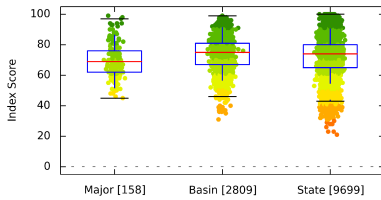
### Soil Erosion Potential



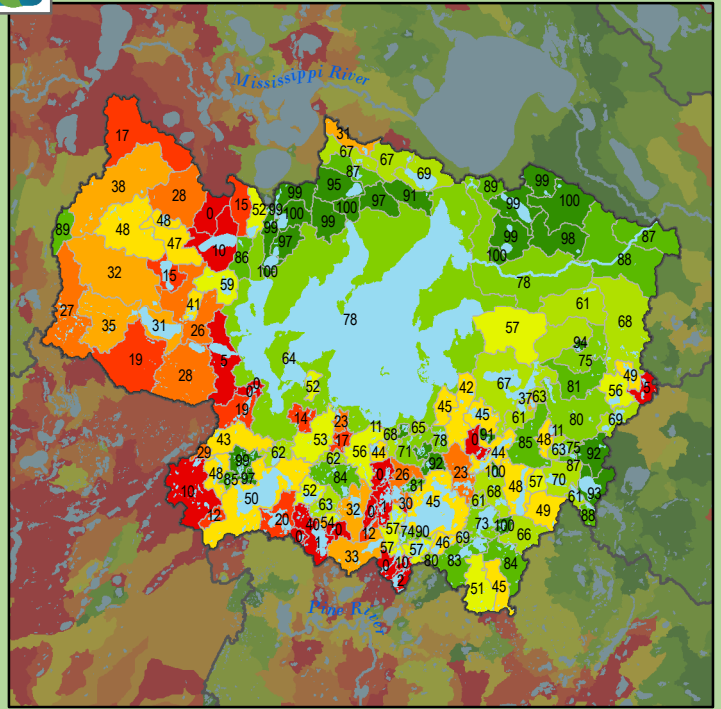
#### Health Score Distributions:

Leech Lake River

Min: 45  
Max: 99  
Median: 69.0  
Mean: 69.77  
Standard Dev: 11.41



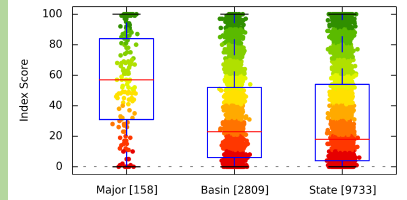
### Terrestrial Habitat Quality



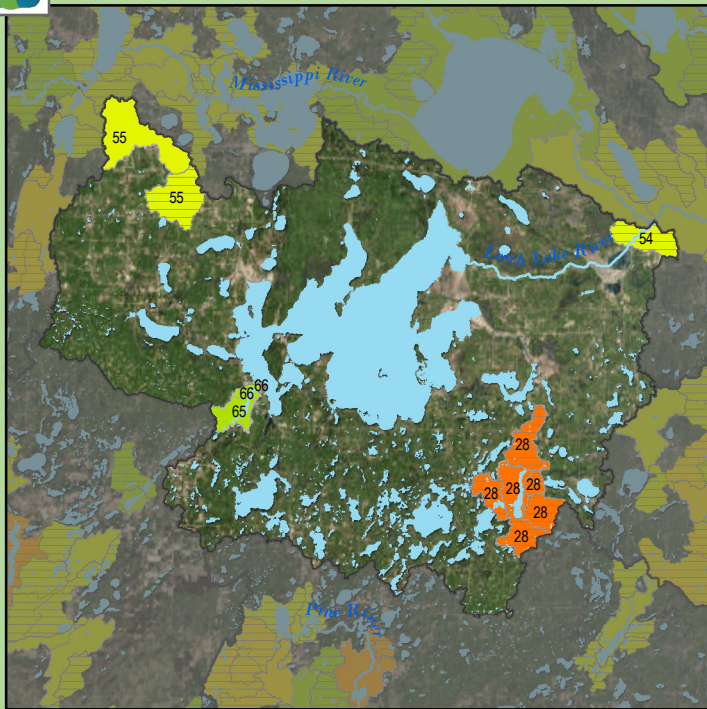
#### Health Score Distributions:

Leech Lake River

Min: 0  
Max: 100  
Median: 57.0  
Mean: 55.49  
Standard Dev: 31.34



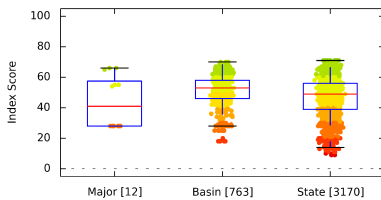
### Stream Species Quality - Mussel Score



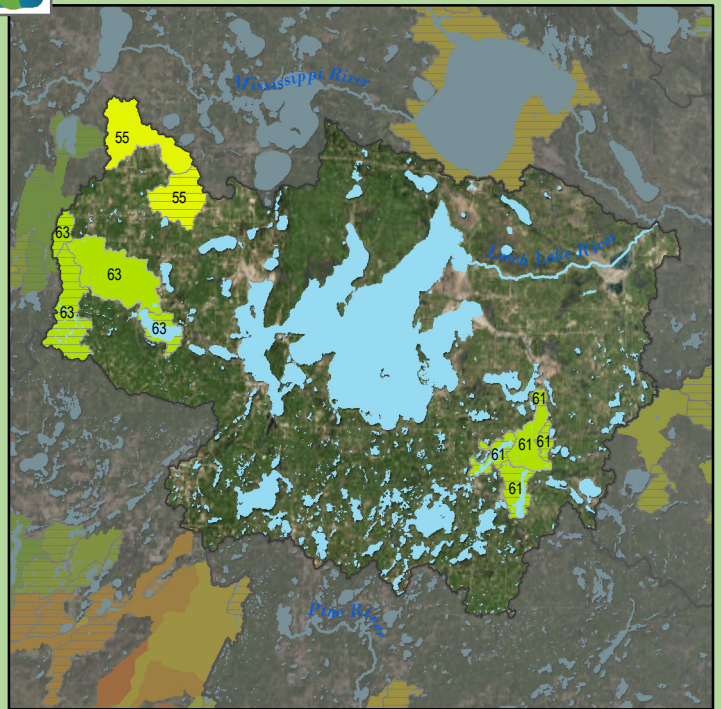
#### Health Score Distributions:

Leech Lake River

Min: 28  
Max: 66  
Median: 41.0  
Mean: 44.08  
Standard Dev: 16.55



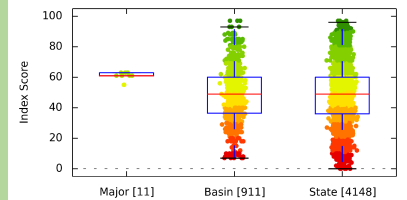
### Stream Species Quality - Aquatic Invertebrate IBI



#### Health Score Distributions:

Leech Lake River

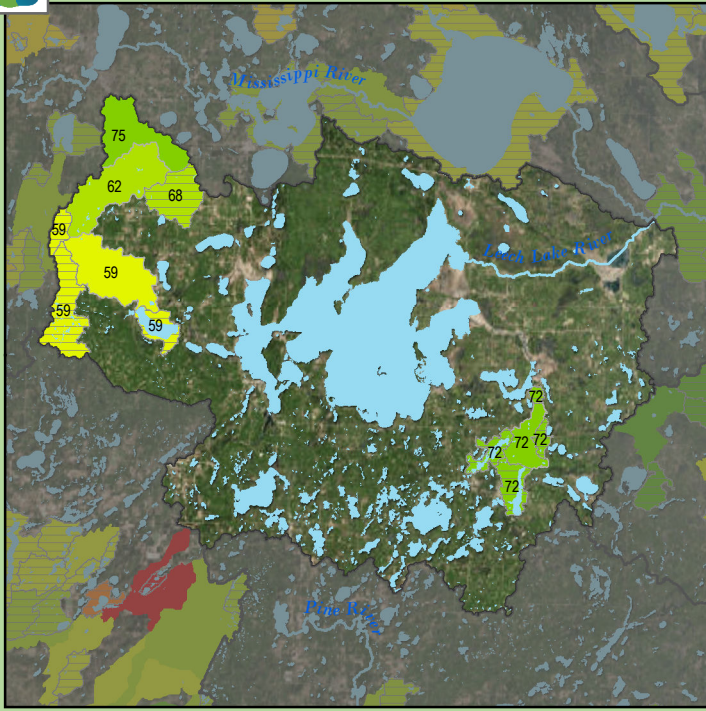
Min: 55  
Max: 63  
Median: 61.0  
Mean: 60.64  
Standard Dev: 2.8







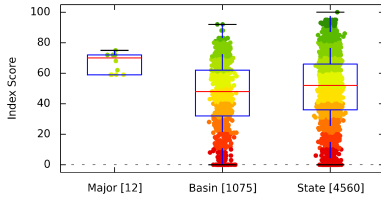
### Stream Species Quality - Fish IBI



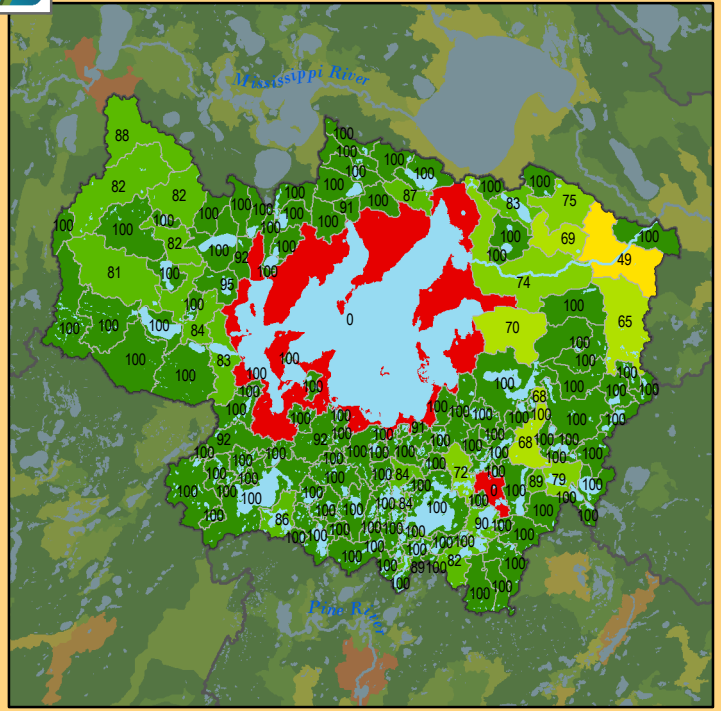
#### Health Score Distributions:

Leech Lake River

Min: 59  
Max: 75  
Median: 70.0  
Mean: 66.75  
Standard Dev: 6.26



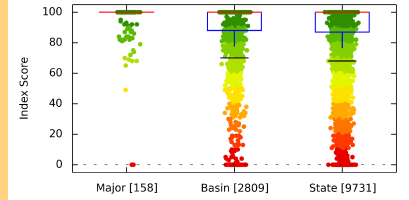
### Aquatic Connectivity



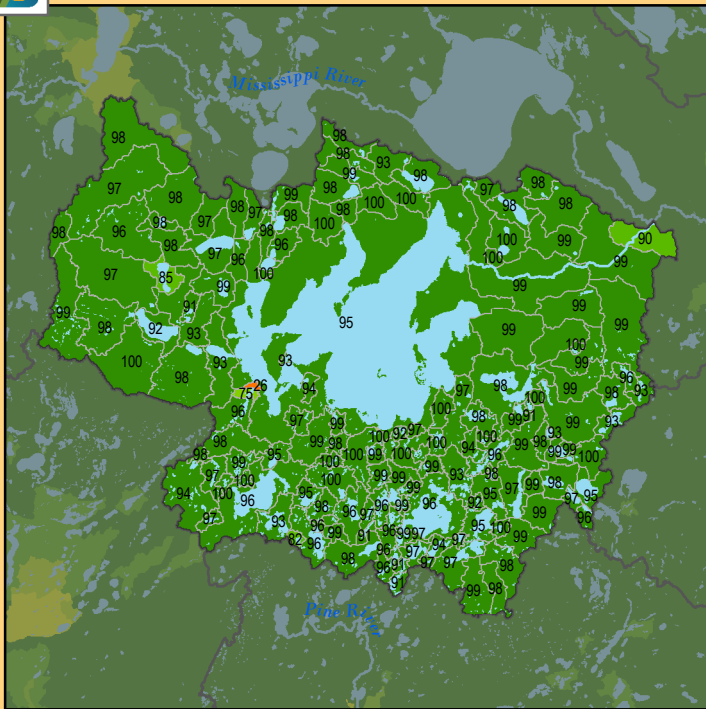
#### Health Score Distributions:

Leech Lake River

Min: 0  
Max: 100  
Median: 100.0  
Mean: 94.76  
Standard Dev: 13.87



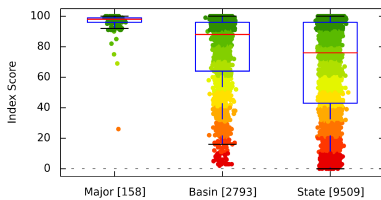
### Riparian Connectivity



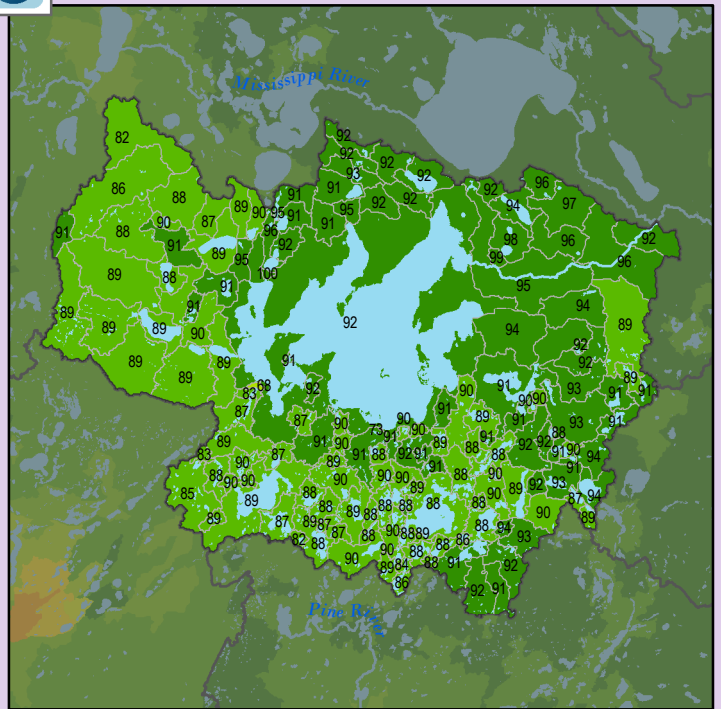
#### Health Score Distributions:

Leech Lake River

Min: 26  
Max: 100  
Median: 98.0  
Mean: 96.31  
Standard Dev: 6.92



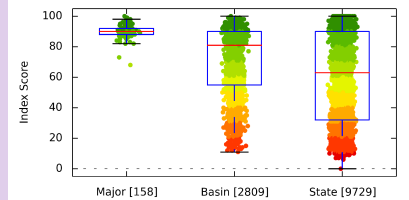
### Non-Point Source - Phosphorus Risk



#### Health Score Distributions:

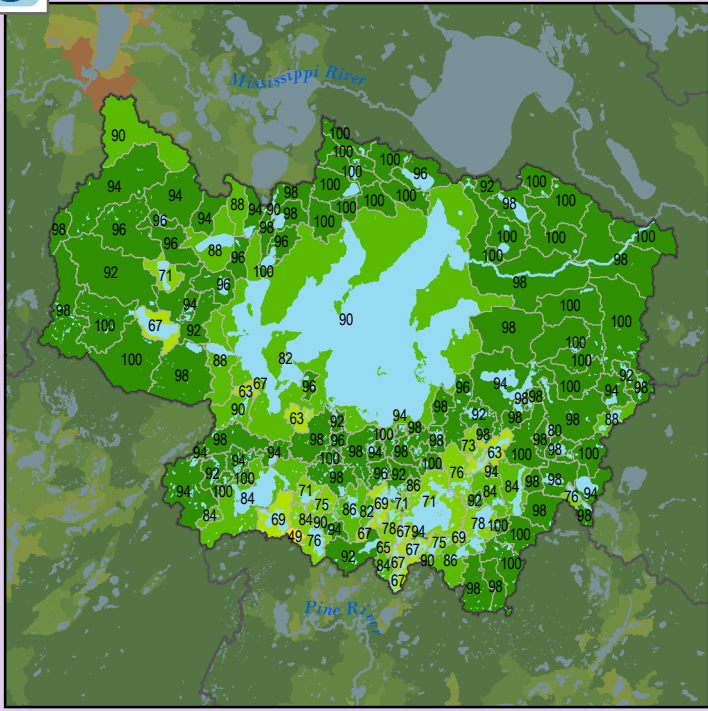
Leech Lake River

Min: 68  
Max: 100  
Median: 90.0  
Mean: 89.94  
Standard Dev: 3.65





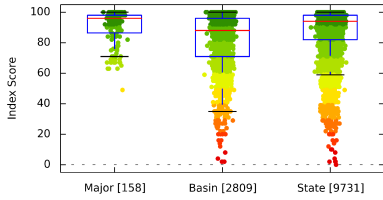
### Localized Pollution Sources



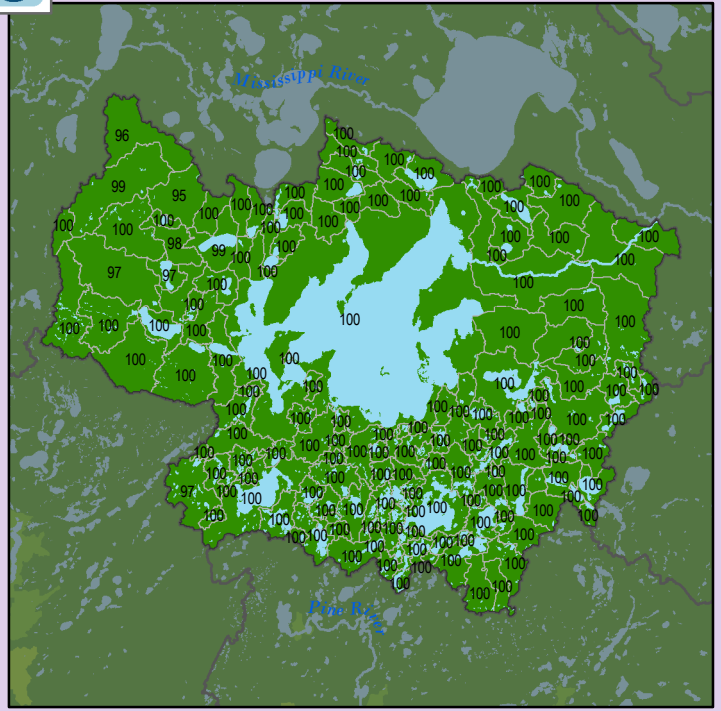
#### Health Score Distributions:

Leech Lake River

Min: 49  
Max: 100  
Median: 96.0  
Mean: 90.74  
Standard Dev: 11.24



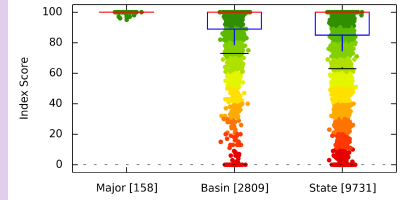
### Localized Pollution Sources - Animal Units



#### Health Score Distributions:

Leech Lake River

Min: 95  
Max: 100  
Median: 100.0  
Mean: 99.86  
Standard Dev: 0.67



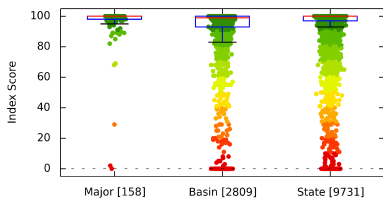
### Localized Pollution Sources - Potential Contaminants



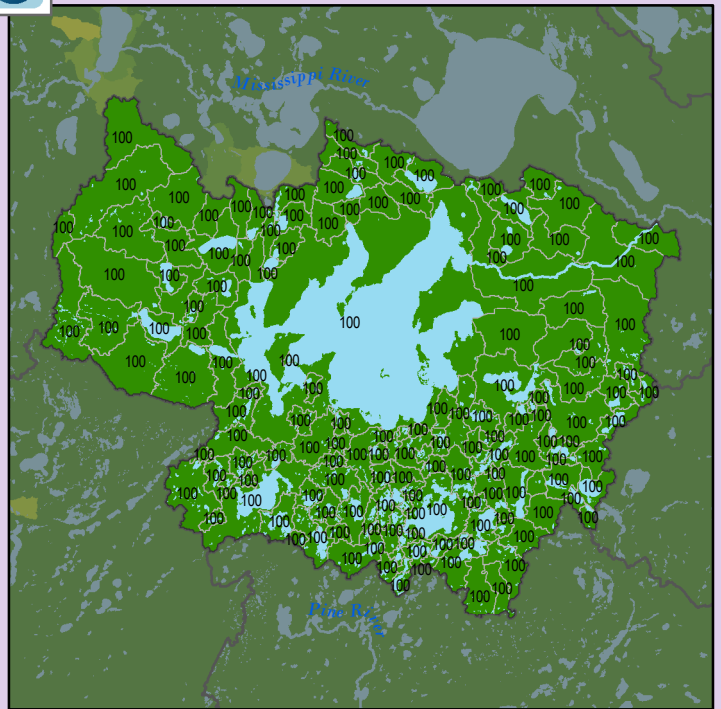
#### Health Score Distributions:

Leech Lake River

Min: 0  
Max: 100  
Median: 100.0  
Mean: 96.33  
Standard Dev: 12.99



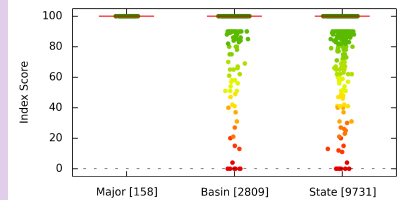
### Localized Pollution Sources - Superfund Sites



#### Health Score Distributions:

Leech Lake River

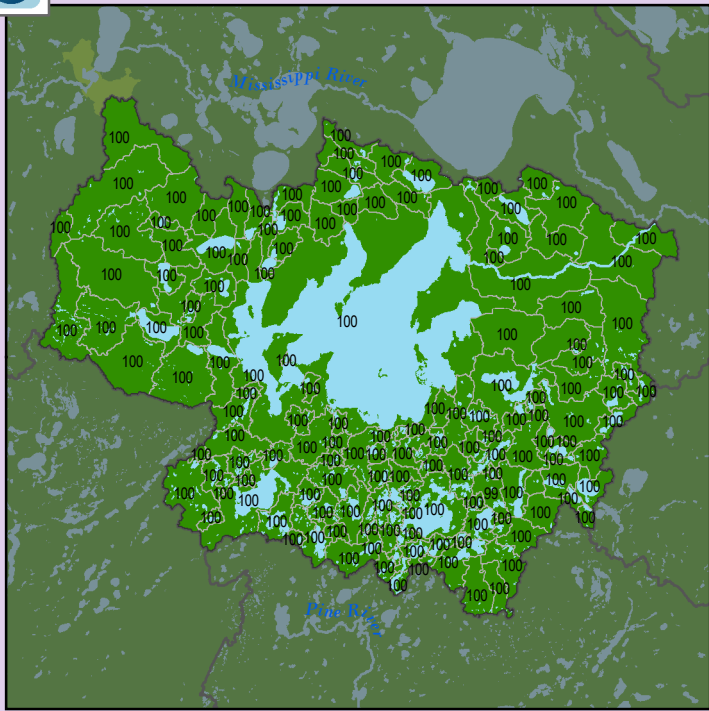
Min: 100  
Max: 100  
Median: 100.0  
Mean: 100.0  
Standard Dev: 0.0







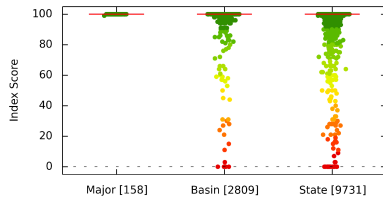
### Localized Pollution Sources - Wastewater Treatment



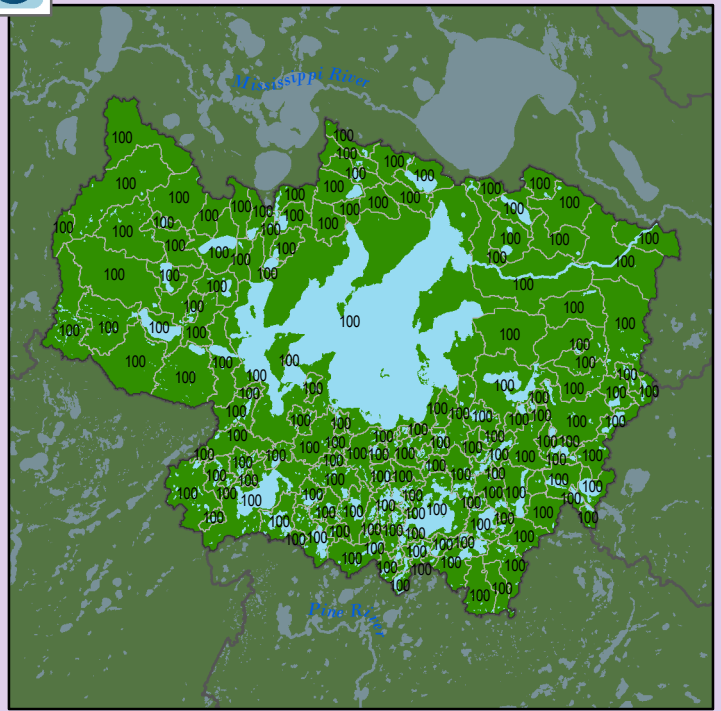
#### Health Score Distributions:

Leech Lake River

Min: 99  
Max: 100  
Median: 100.0  
Mean: 99.99  
Standard Dev: 0.08



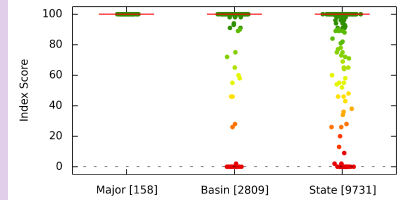
### Localized Pollution Sources - Open Pit Mines



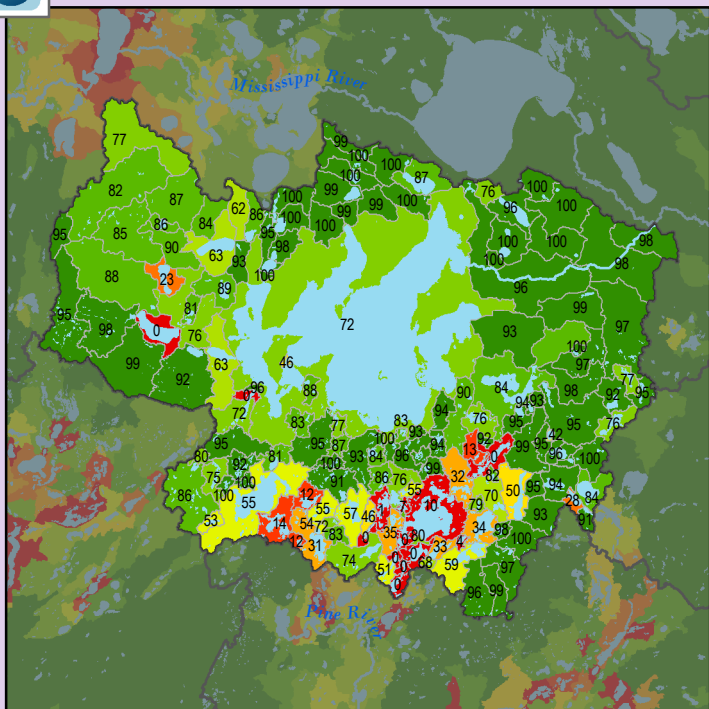
#### Health Score Distributions:

Leech Lake River

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



### Localized Pollution Sources - Septic Systems



#### Health Score Distributions:

Leech Lake River

Min: 0  
Max: 100  
Median: 87.5  
Mean: 75.01  
Standard Dev: 30.98

