

Kinkaid Creek Watershed-based Plan Planning Committee Meeting 1

February 18, 2021
10:00 AM



Agenda

- I. Welcome and Introductions
- II. Review of Initial Stakeholders Meeting
- III. Nine Elements of a Watershed-based Plan
- IV. Synopsis of the Kinkaid Creek Watershed (Inventory)
- V. Concerns Within the Watershed
- VI. Preliminary Goals
- VII. Planning Committee Participation
- VIII. Meeting Schedule

Greater Egypt Regional Planning and Development Commission

Tyler Carpenter

GIS & Environmental Planning Director

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Planner

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Planner



Illinois Environmental Protection Agency



IEPA- 604(b) Program

- Water Quality Management Planning Grant
- Greater Egypt's 604(b) grants include:
 - watershed-based planning
 - coordinating the Volunteer Lake Monitoring Program (VLMP)
 - stormwater management educational materials

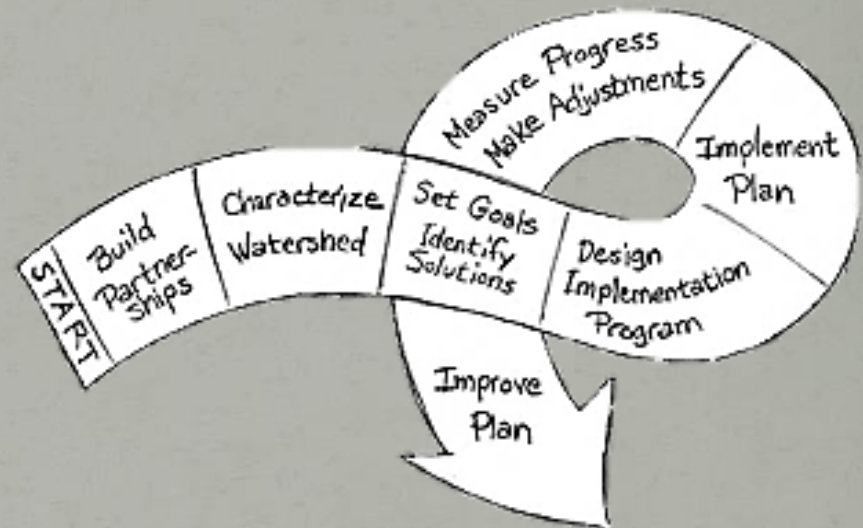
Initial Stakeholders Meeting Review

November 17 , 2020- Virtual

- Staff reviewed Inventory and Assessment/ Watershed-based Planning Components
 - Why is mercury not typically included in watershed plans?
 - “Mercury is found at the bottom of the lake, making it difficult to remove. Therefore, mitigation to the source are often put in place, though the source of mercury in Kinkaid is atmospheric deposition. Fish advisories are in place, mercury is only harmful if ingested.”
 - Have there been any HAB outbreaks?
 - “A HAB outbreak was reported in 2018. Kinkaid Conservancy now lowers lake levels and monitors every 2 weeks. No outbreaks have occurred since.”

Watershed-based Plan

- Summarizes the overall condition of the watershed
- Provides a framework to restore water quality in impaired waters
- Protects water quality in other waters adversely affected or threatened by point source and non-point source pollution
- Allows for funding of water quality projects through EPA 319 Program



Point Source Pollution

- Domestic WTPs
- Industrial WTPs
- Combined Sewer Overflows
- Sanitary Sewer Overflows
- Mine Discharges
- Landfills



Savingwater.co

Nonpoint Source Pollution

- Urban Runoff
- Golf Courses
- Crop Production
- Livestock Grazing
- Erosion
- Failing Septic Systems



CropLife.ca

Why Develop a Watershed-based Plan?

Benefits can include:

- Reduction of pollution on surface and groundwater
- Restoration of water bodies to a healthy state
- Conservation of farmland
- Partnerships and collaboration among stakeholders
- Support of sustainable communities and economic growth
- Prevention and reduction of flooding
- Funding for various management measures
- Ten-year Plans

Elements of a Successful Watershed-based Plan

Collaboration of Stakeholders

- Watershed-based planning is a stakeholder-supported approach to improving and protecting water resources
- Stakeholders can include representatives from local government, conservation groups, and landowners
- The success of a watershed-based plan is dependent on the involvement of the stakeholders



Elements of a Successful Watershed-based Plan

Planning Efforts:

1. Identify causes and sources of water pollution and estimate existing pollutant loads.
2. Set water quality goals and load reduction targets to achieve those goals, and estimate load reductions expected from recommended management measures.
3. Describe the management measures needed to achieve load reduction targets.
4. Describe the technical and financial assistance (amount, costs, and sources) and relevant authorities needed to implement the plan.
5. Enhance public understanding through outreach measures.

Planning Efforts

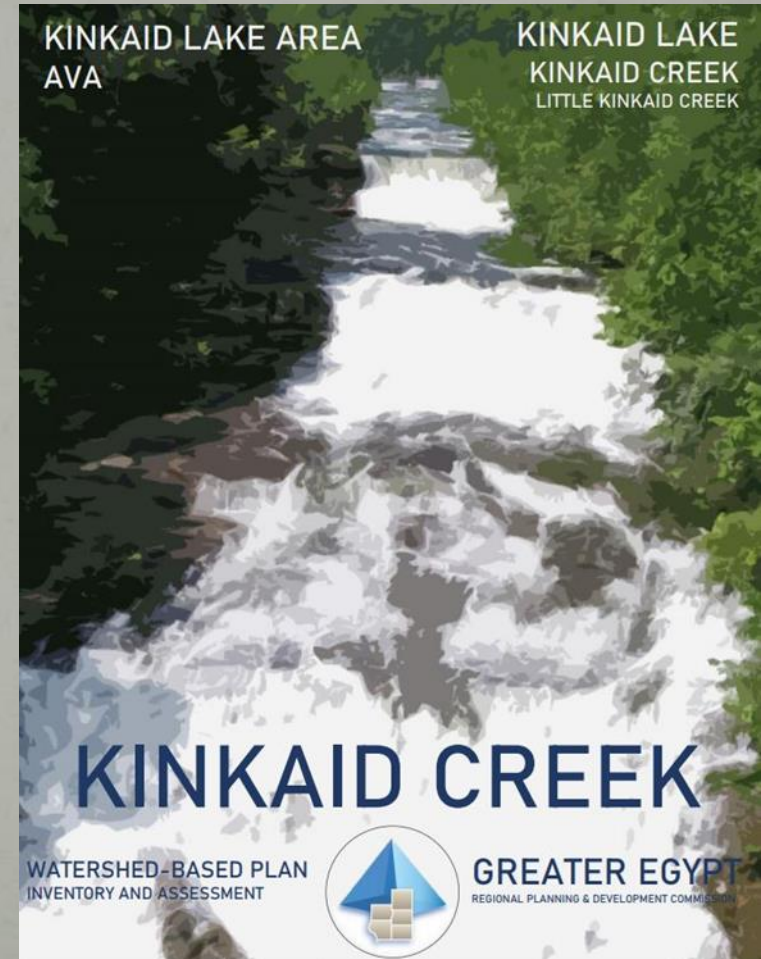
6. Provide a schedule for implementing the management measures identified in the plan.
7. Identify interim, measurable milestones for determining whether management measures are being implemented on schedule.
8. Identify interim benchmarks to measure progress in meeting water quality goals and load reduction targets.
9. Describe a monitoring component.

Elements of a Successful Watershed-based Plan

1.) Identify causes and sources of water pollution and estimate existing pollutant loads

Watershed Resource Inventory

- Documentation of existing conditions in the watershed and its sub-watersheds
- Inventory of components such as: Geographic Boundaries, Land Use, and Drainage Assessment
- Field Assessment of erosion and riparian areas



Nine Elements of a Watershed-based Plan

2.) Set Water Quality Goals and Load Reduction Targets

- Achieve water quality standards and total maximum daily loads for specific pollutants
- Base nutrient reduction goals off of the IL Nutrient Loss Reduction Strategy
- Identify load reduction targets for specific nutrients/ pollutants

Waterbody	Assessment Unit ID	Size	Causes of Impairment(s)	Sources of Impairment(s)
Kinkaid Lake	IL_RNC	3,475 ac	Mercury	Atmospheric Deposition-Toxics, Source Unknown
Little Kinkaid Creek	IL_NBA	16.9 mi	N/A	N/A
Kinkaid Creek	IL_NB	9.66 mi	N/A	N/A
Kinkaid Creek	IL_NB-01	3.38 mi	N/A	N/A

Elements of a Successful Watershed-based Plan

3.) Describe the management measures needed to achieve load reduction targets

Management measures could include:

- Identify best management practices (BMPs) to achieve water quality objectives
- Identify priority areas and practices



Elements of a Successful Watershed-based Plan

4.) Describe the technical and financial assistance and relevant authorities needed to implement the plan

- IEPA 319 Grants offer a 60 percent cost share
- Multiple other sources

Best Management Practice	Funding Sources	Notes/Cost Share Rates
<ul style="list-style-type: none"> • Filter strips and riparian buffers • Dry dams (WASCBs) • Grass waterways • Terraces • Diversions • Wetland creation • Blind inlets and tile drainage management • Nutrient management • Cover crops 	Illinois EPA – 319 program NRCS – EQIP program FSA – CRP program SWCD – CPP program USFWS – Acres for wildlife program IDNR/SWCD – CREP program IDNR – SWG program NRCS – WHIP program IDNR – Special Wildlife Funds Grants	CREP eligible acres must be in the 100-year floodplain and/or have cropped ground with an erodibility index of 8 or greater adjacent to riparian zones; must have cropping history as defined by the USDA. SWG program requires 50% state match and must address goals/species outlined in the State of Illinois Comprehensive Wildlife Plan. NRCS, FSA, and SWCD programs generally provide 60% cost-share, however, some special programs and practices can provide up to 90%. FSA, CREP and some NRCS programs also provide annual rental payments for taking ground out of production.
<ul style="list-style-type: none"> • Streambank/lake shore stabilization and in-stream grade control or other grade control 	Illinois EPA – 319 Program SWCD – SSRP program NRCS – EQIP program	Illinois EPA 319 offers 60% cost share SSRP offers 75% cost share EQIP offers 60% cost share
<ul style="list-style-type: none"> • Wetland restoration and other habitat practices 	Illinois EPA – 319 program NRCS – EQIP program NRCS – WRP program FSA – CRP program USFWS – Landowner Incentive Program IDNR/SWCD – CREP program IDNR – SWG program IDNR – Special Wildlife Funds Grants	WRP program – multiple/stringent eligibility requirements. NRCS, FSA, and SWCD programs provide a minimum of 60% cost-share, however, some special programs and practices can provide up to 90%. FSA, CREP and some NRCS programs also provide annual rental payments for taking ground out of production.
<ul style="list-style-type: none"> • Livestock/equestrian practices, including fencing, stream crossings, pasture management, watering systems etc. 	Illinois EPA – 319 program NRCS – EQIP program IDNR – Forestry Development Act funding (FLEP)	FLEP is applicable to livestock fencing for woodlands. Livestock management recommendations outlined in this report that includes wetland and/or habitat restoration can be funded by other programs such as the US F&W – Landowner Incentive Program EQIP typically provides 60% cost-share

Nine Elements of a Watershed-based Plan

5.) Enhance Public Understanding Through Outreach Measures

Measures could include:

- Public meetings
- Informational pamphlets regarding watershed planning efforts
- Workshops
 - Stormwater management
 - Agricultural activities

You Can Manage Stormwater!
Small changes can have a big impact on stormwater runoff

Around the Home	Lawn and Garden	Garage and Driveway
 <p>Dispose of household chemicals properly by recycling or taking them to a designated collection facility or recycling.</p>	 <p>Properly dispose of pet waste by flushing in toilet or emptying in a receptacle. Pet waste contains bacteria and other nutrients that can end up in storm drains.</p>	 <p>Use a car wash instead of washing your vehicle in the driveway. Alternatively, you can wash it in the yard where the water will infiltrate the lawn.</p>
 <p>If you are on a septic system, follow the guidelines for routine maintenance. The EPA recommends pumping every three to five years.</p>	 <p>Rake grass clippings and other yard debris to compost or mulch. In some municipalities, you can also arrange a collection, rather than sweeping it into the street.</p>	 <p>Maintain your vehicle to prevent leaks. If you notice a spill or leak, use sand or cat litter to absorb the liquid rather than rinsing it into the driveway and street.</p>
 <p>Maintain discarded pool water on your property or by sanitary sewer. Do not backwash into the street or directly into storm drain.</p>	 <p>Apply fertilizers and pesticides at recommended levels. Do not overwater lawn as this could lead to the chemicals running off of lawn.</p>	 <p>Store vehicle fluids and oils properly. Like household chemicals, if you have unused fluids, dispose of properly by taking them to a designated recycling facility.</p>
 <p>Rain barrels capture rainwater from rooftops. This alleviates overflow into storm drains. This water can also be stored and used on lawns or gardens.</p>	 <p>If your property adjoins a waterbody, allow some growth between your yard and the bank. This creates a vegetative buffer that filters nutrient runoff.</p>	 <p>Education and information is also an important component of stormwater management. Stenciling on or near storm drains raises awareness of stormwater management.</p>

Environmental Information

Various programs are available in our area for the collection of yard refuse and hazardous materials including spring/fall cleanups and collection drives. Please contact your local office for more information.

Cartersville City of
City Hall
(618) 985-2252

Carbondale
Maintenance and Environmental Services
(618) 457-3275

Herrin
Public Works
(618) 942-2255

Marion
Street Department
(618) 993-3487

Franklin-Williamson Bi-County Health Department
Environmental Health
(618) 993-8111

Jackson County Health Department
Environmental Health Division
(618) 684-3143 (ext. 128)

Recycling centers in our area also take in various items. Please call or visit their webpage to see what materials are accepted.

Cimco Recycling
Carbondale: (618) 457-6319
Marion: (618) 998-1111
cimcoresources.com

Southern Recycling Center
Carbondale: (618) 549-2880
southernrecyclingcenter.com



Nine Elements of a Watershed-based Plan

6.) Construct an Implementation Schedule for Measures in the Plan

Schedule should include:

- Recommended BMP
- Information and Education components
- Monitoring component

Goal	Phase I		Phase II				Phase III			
	Short-term (2 yr)		Mid-term (3-6 yr)				Long-term (7-10 yr)			
	1	2	3	4	5	6	7	8	9	10
Establish watershed action council	X									
Hold public meetings to gain input	X	X	X							
Hold workshops to inform public on stormwater management		X		X		X		X		
Continue researching funding and technical assistance	X	X	X							
Select site-specific BMPs for preliminary designs	X	X	X							
Submit grant applications based on BMPs in plan		X	X	X	X	X	X	X		
Meet with landowners to review BMPs in plan		X	X	X	X	X				
Implement and execute BMPs			X	X	X	X	X	X	X	X
Monitor progress of implementation				X	X	X	X	X	X	X
Announce success of plan implementation					X	X	X	X	X	X
Evaluate Accomplishments					X	X	X	X	X	X

Nine Elements of a Watershed-based Plan

7.) Identify Milestones to Determine if Management Measure are Being Implemented on Schedule

Interim Measurable Milestones				
Goal	Indicator	Short (2-year)	Mid (6-yr)	Long (10-yr)
Outreach and Education	Educational Brochures for Stormwater Management	500	1000	1500
	Educational Brochures for Agricultural Management	500	1000	1500
	Electronics Drive	1	2	3
	Number of Litter Cleanup Days	3	6	9
	Public Meetings Held	4	10	14
	Agricultural Management Workshops Held	1	3	5
Reduce/Mitigate Flooding	Detention Basin	-	-	1
	Infiltration Basins	-	1	1

8.) Identify Interim Benchmarks to Measure Progress in Meeting Water Quality Goals

Benchmarks should include:

- Load Reduction Targets of:
 - Nitrogen
 - Phosphorus
 - Sediment
 - Other pollutants

Benchmark Period	Benchmark Reduction Target					
	Nitrogen (percent)	Nitrogen (lbs./ yr.)	Phosphorus (percent)	Phosphorus (lbs./yr.)	Sediment (percent)	Sediment (tons/yr.)
2 Year (Phase I)	-	-	-	-	-	-
6 Year (Phase II)	7%	13,911	10%	4,147	10%	3,515
10 Year (Phase III)	15%	29,810	25%	10,368	25%	8,788

Nine Elements of a Watershed-based Plan

9.) Describe a Monitoring Component

Recommends future assessment activities to be undertaken and can be designed to:

- Better identify potential causes and sources of pollution
- Assess BMP effectiveness
- Track and evaluate the effectiveness of plan implementation

Monitoring Component	Phase I		Phase II				Phase III			
	1	2	3	4	5	6	7	8	9	10
Ambient Lakes Monitoring Program	X					X				
Sediment Monitoring	X		X		X		X		X	
Volunteer Lake Monitoring Program	X	X	X	X	X	X	X	X	X	X
Watershed Basin Surveys		X					X			

Hydrologic Unit Code (HUC)

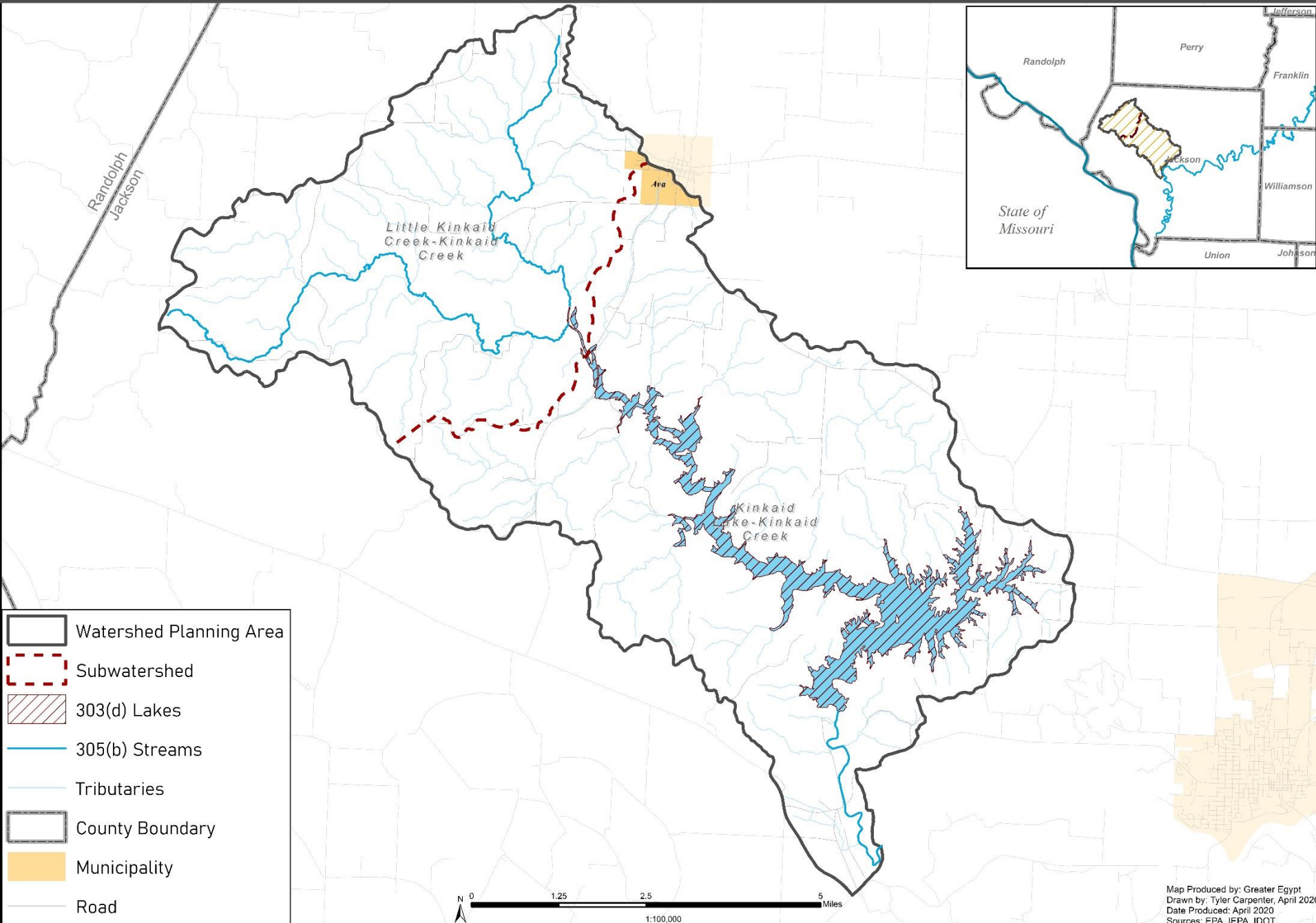
- Identify a hydrologic feature (watershed)
- Six levels of HUC

Name	Level	Digits	Average size (square miles)	Number of HUCs (approximate)	Name	Code (HUC)
Region	1	2	177,560	21	Upper Mississippi	07
Subregion	2	4	16,800	222	Upper Mississippi-Kaskaskia-Meramec	0714
Basin	3	6	10,596	352	Upper Mississippi-Meramec	071401
Subbasin	4	8	700	2,149	Big Muddy	07140106
Watershed	5	10	227	22,000	Kinkaid Creek	0714010611
Subwatershed	6	12	40	160,000	Little Kinkaid Creek-Kinkaid Creek	071401061101
					Kinkaid Lake-Kinkaid Creek	071401061102

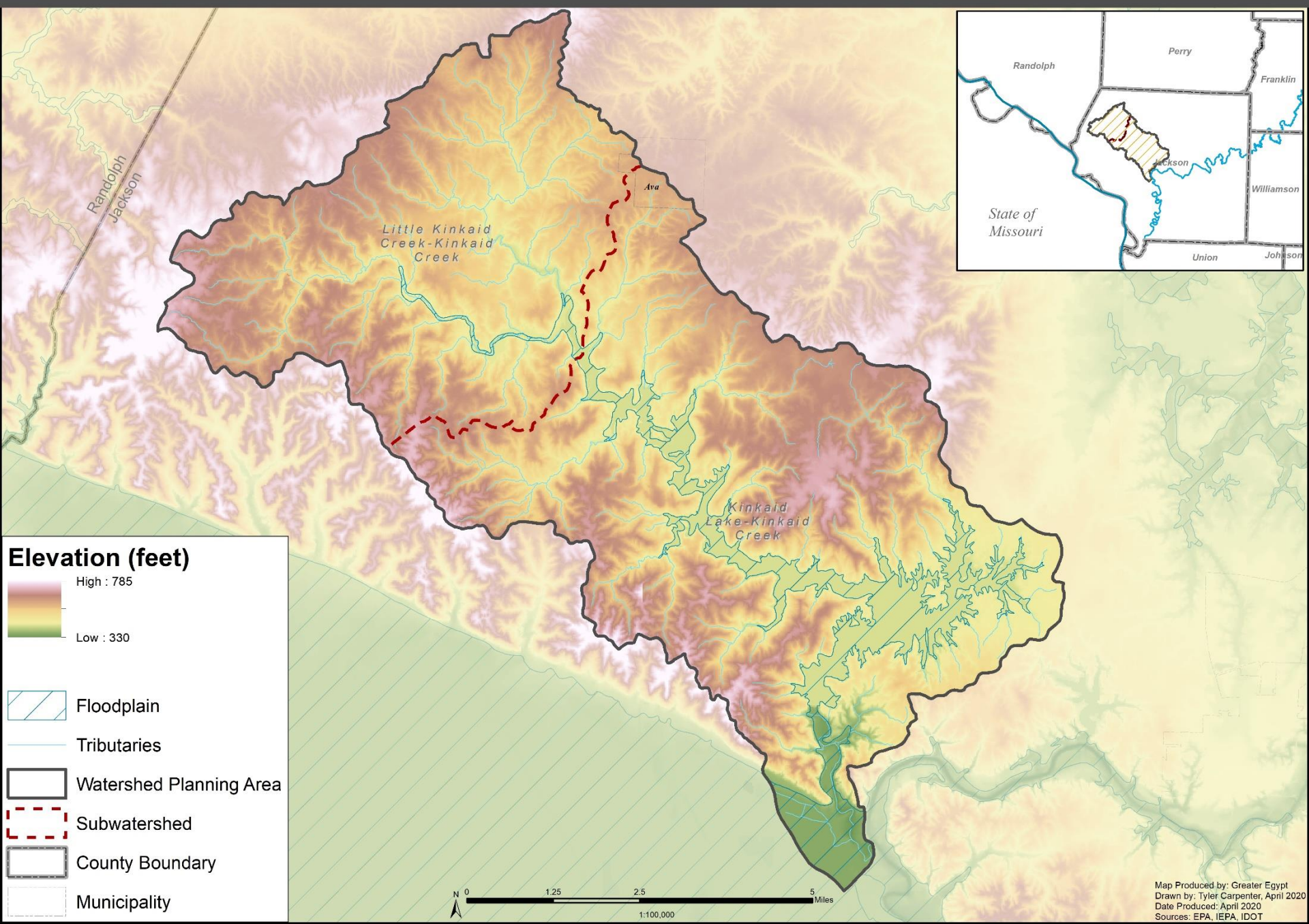
Kinkaid Creek Watershed

- 41,225 acres, or 64 square miles
- Located in Jackson County
- Two separate HUC 12 watersheds:
 - Little Kinkaid Creek-Kinkaid Creek
 - 15,534
 - Kinkaid Lake-Kinkaid Creek
 - 25,708
- Municipalities include:
 - Ava

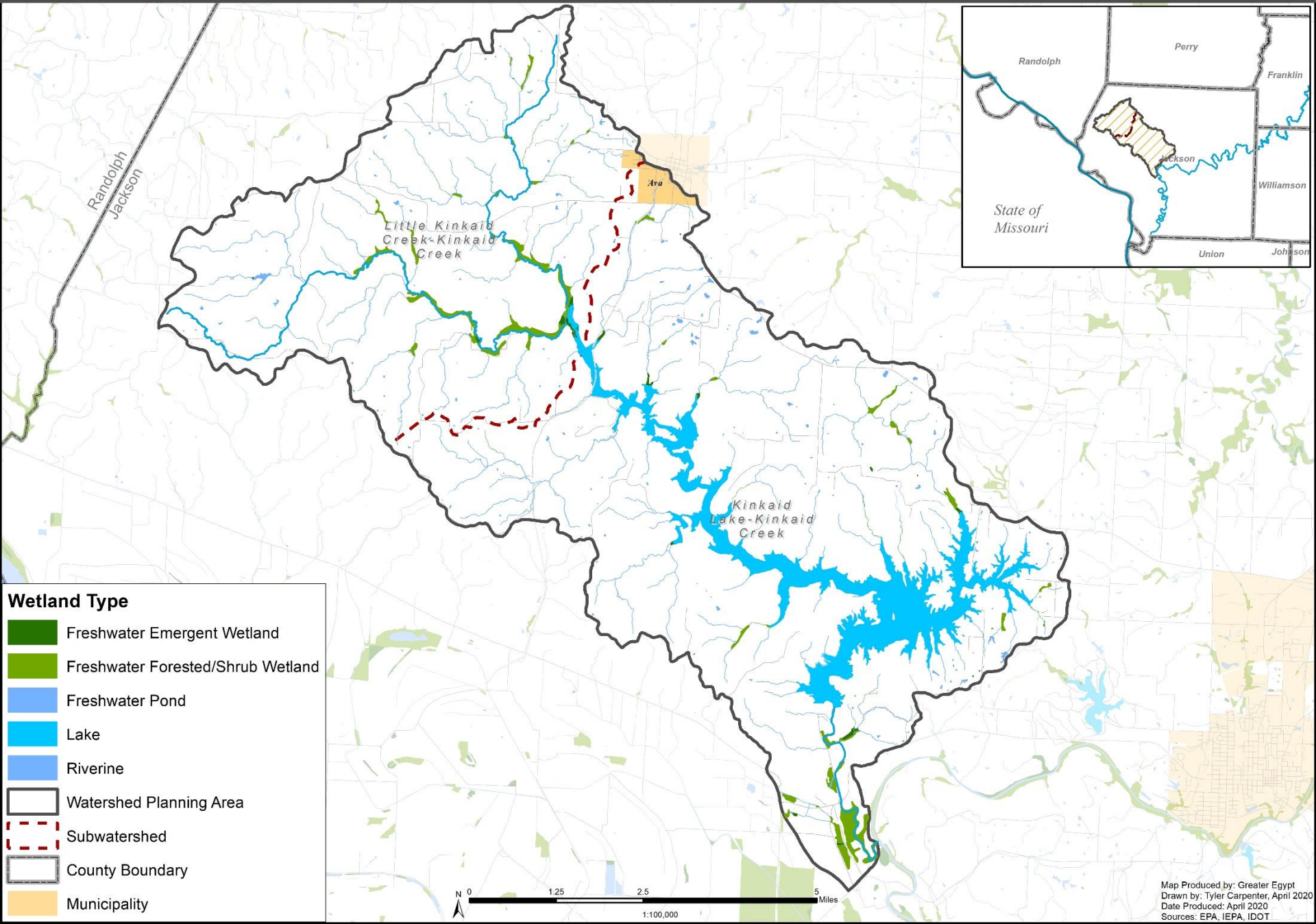
Kinkaid Creek Watershed - Planning Area



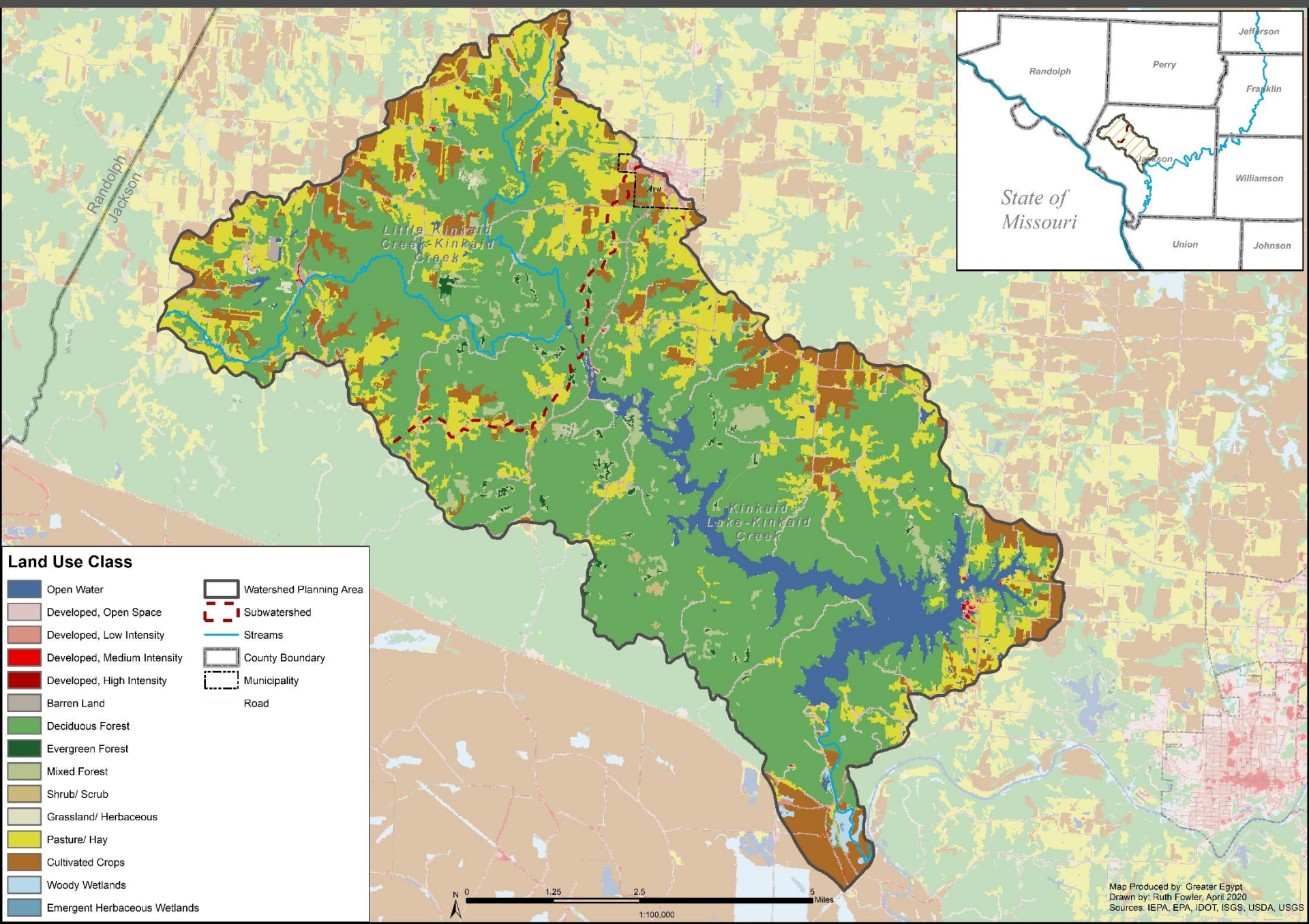
Kinkaid Creek Watershed – Elevation and Floodplain



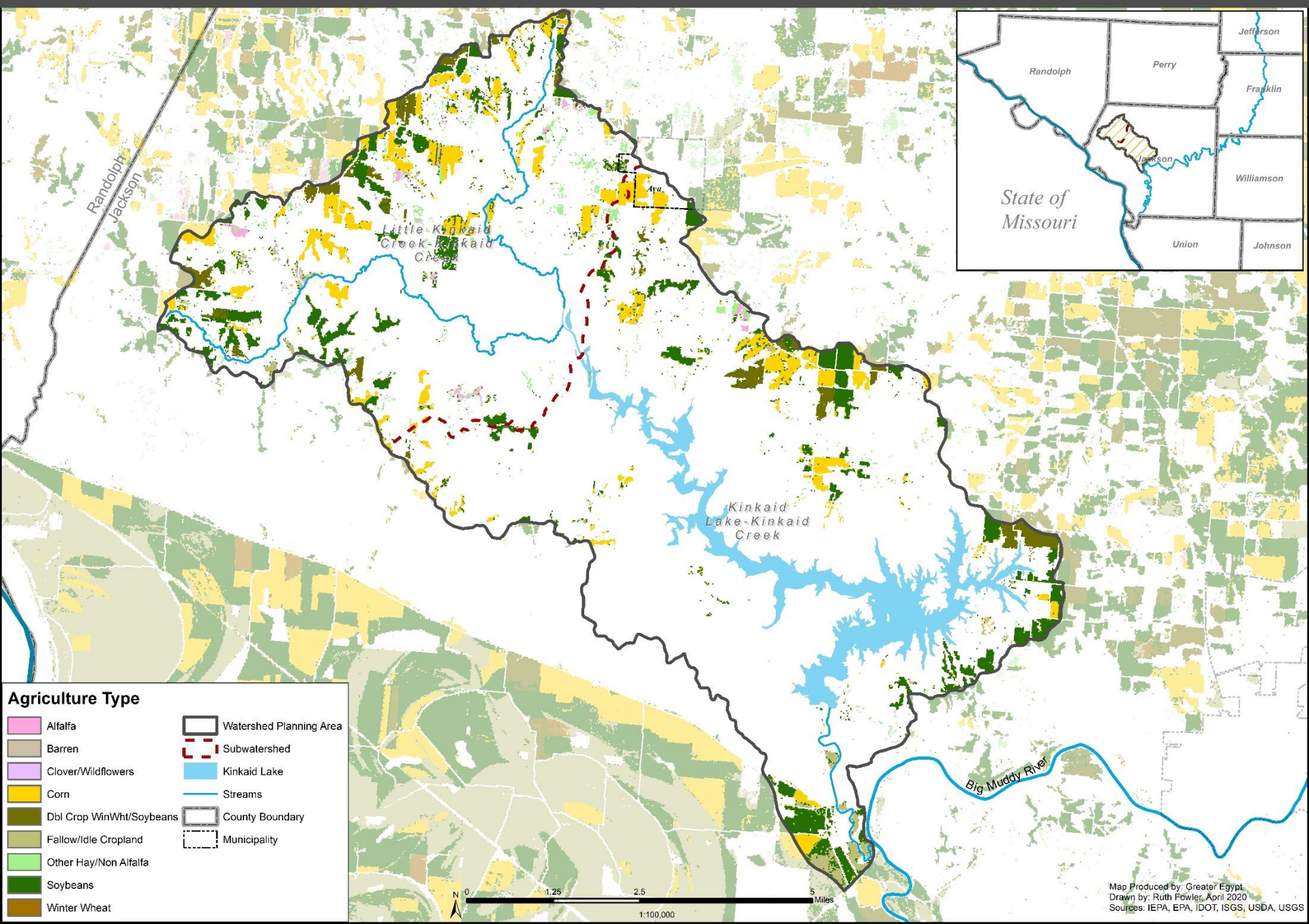
Kinkaid Creek Watershed – Wetlands



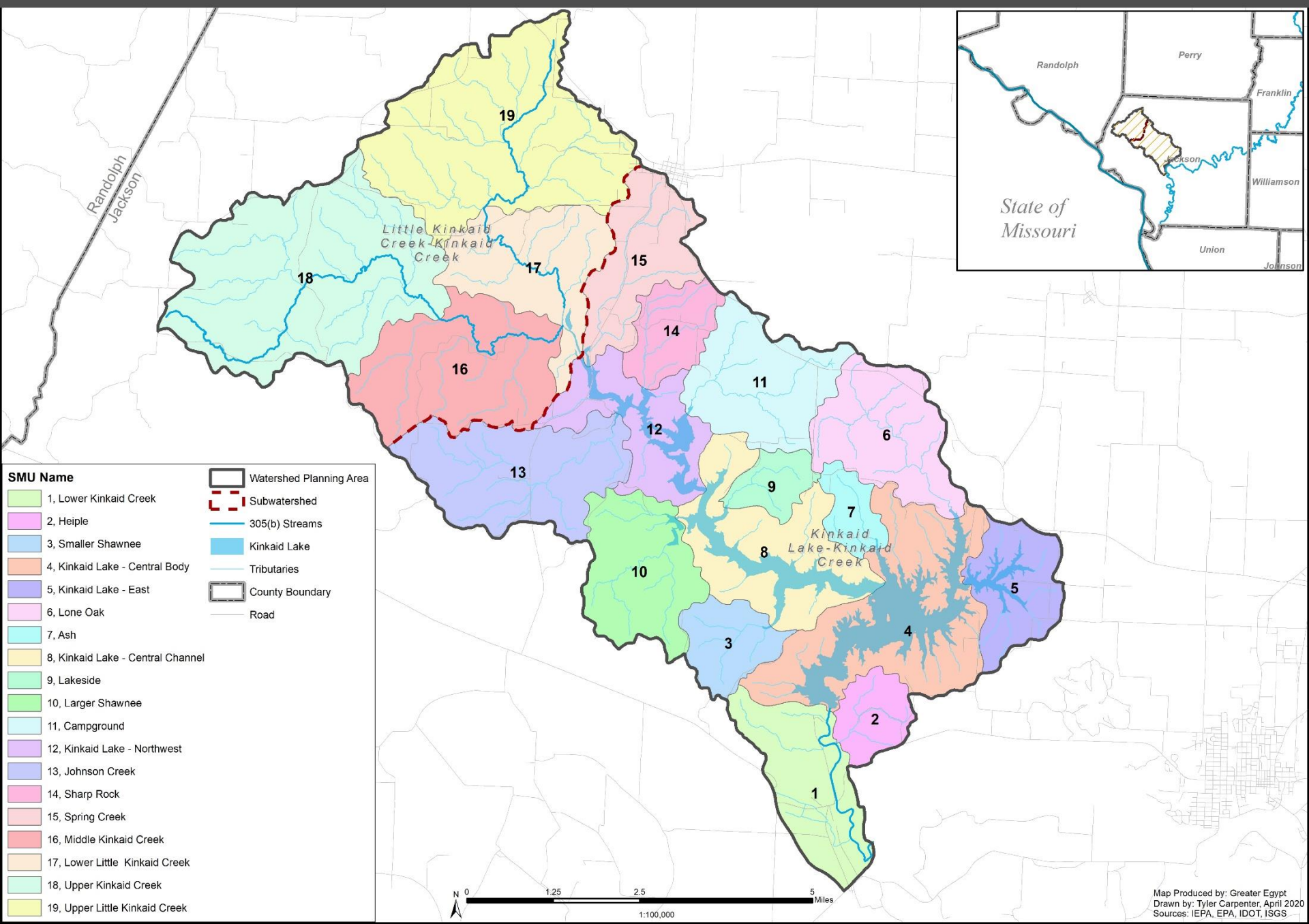
Kinkaid Creek Watershed - Land Use



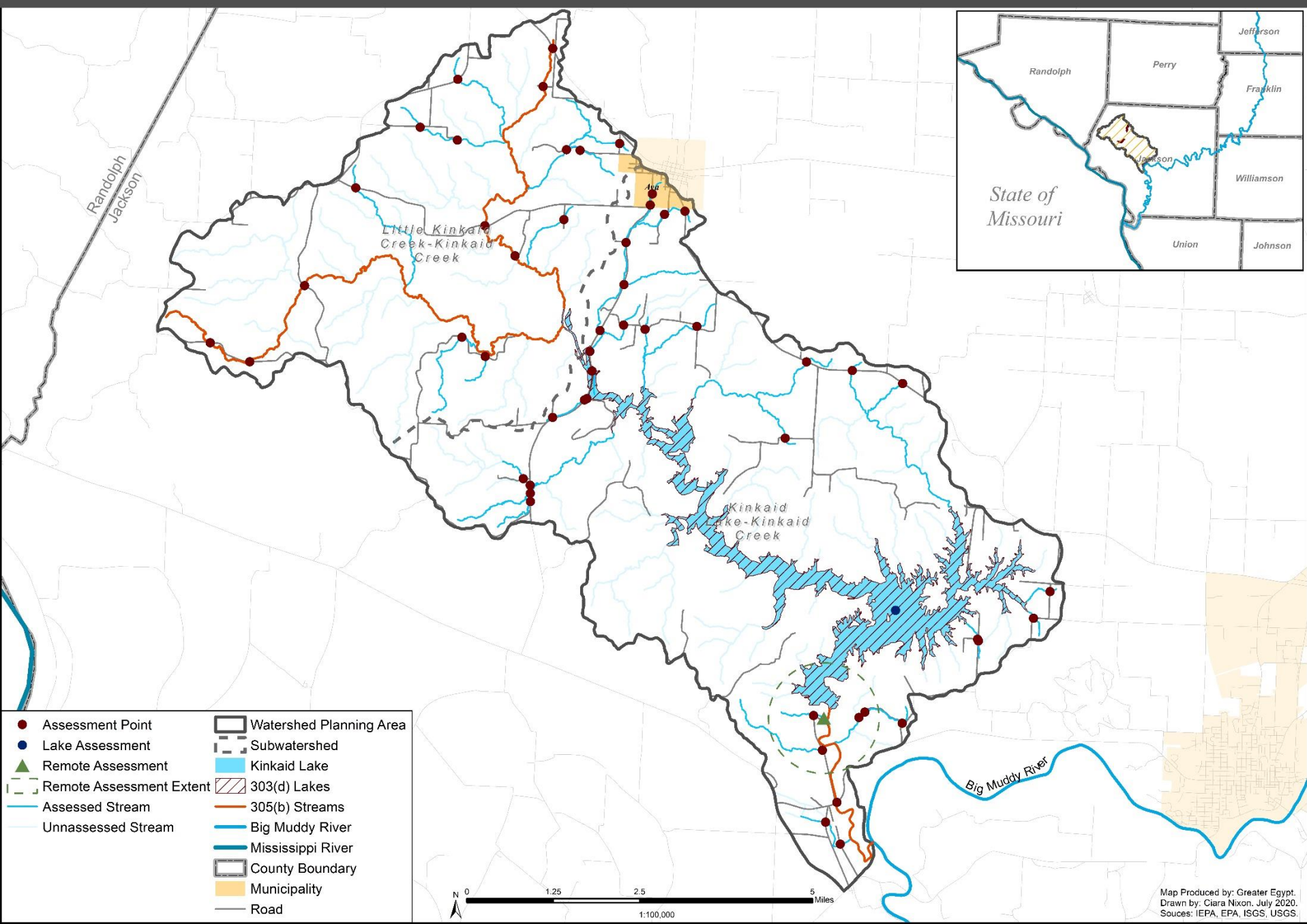
Kinkaid Creek Watershed – Agriculture

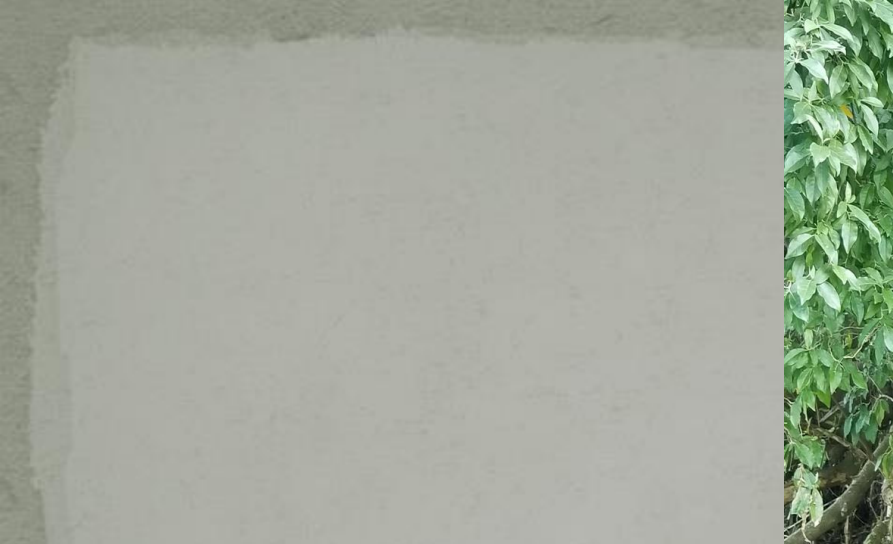


Kinkaid Creek Watershed – Subwatershed Management Units

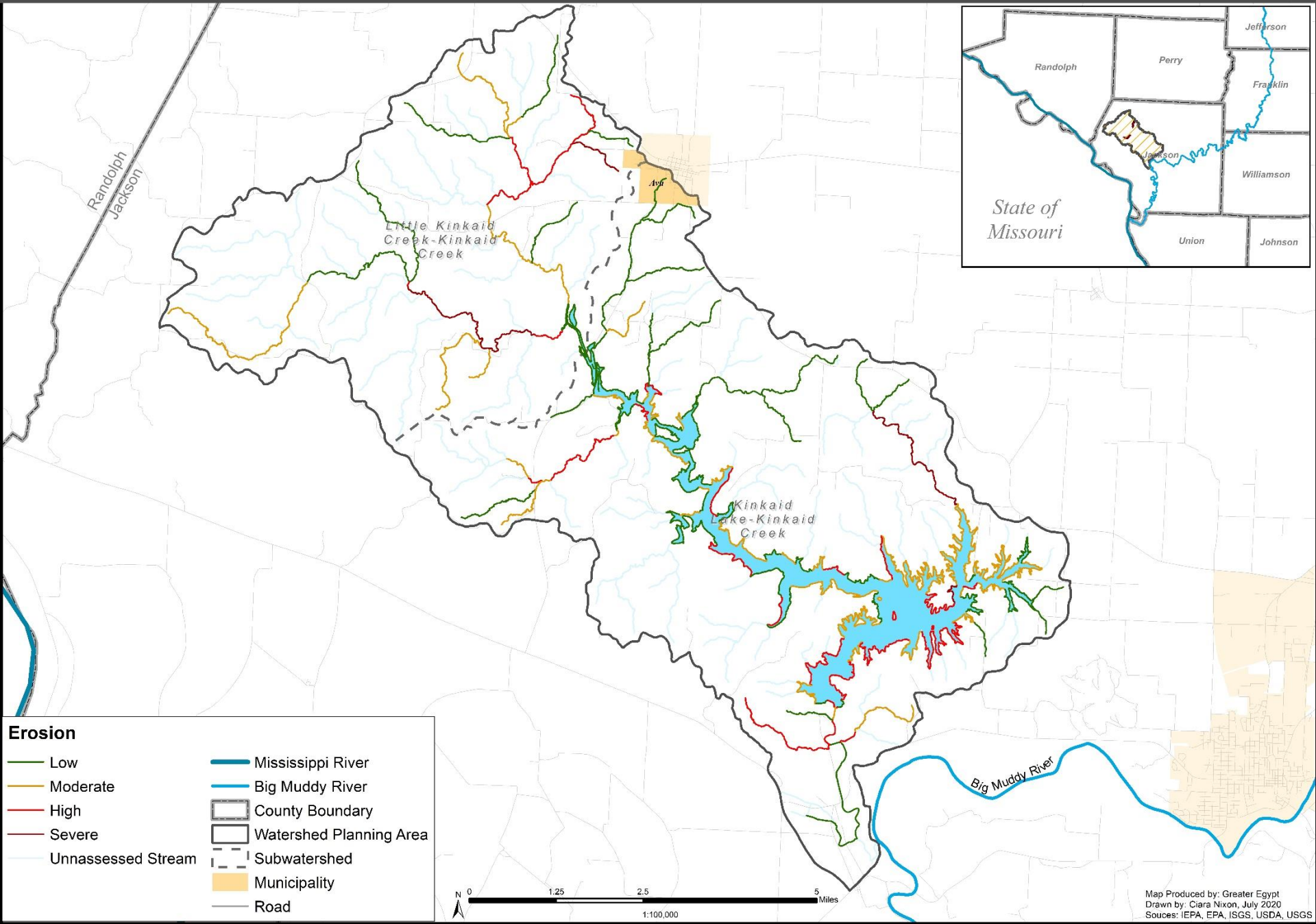


Kinkaid Creek Watershed Planning Area - Assessed Waterbodies

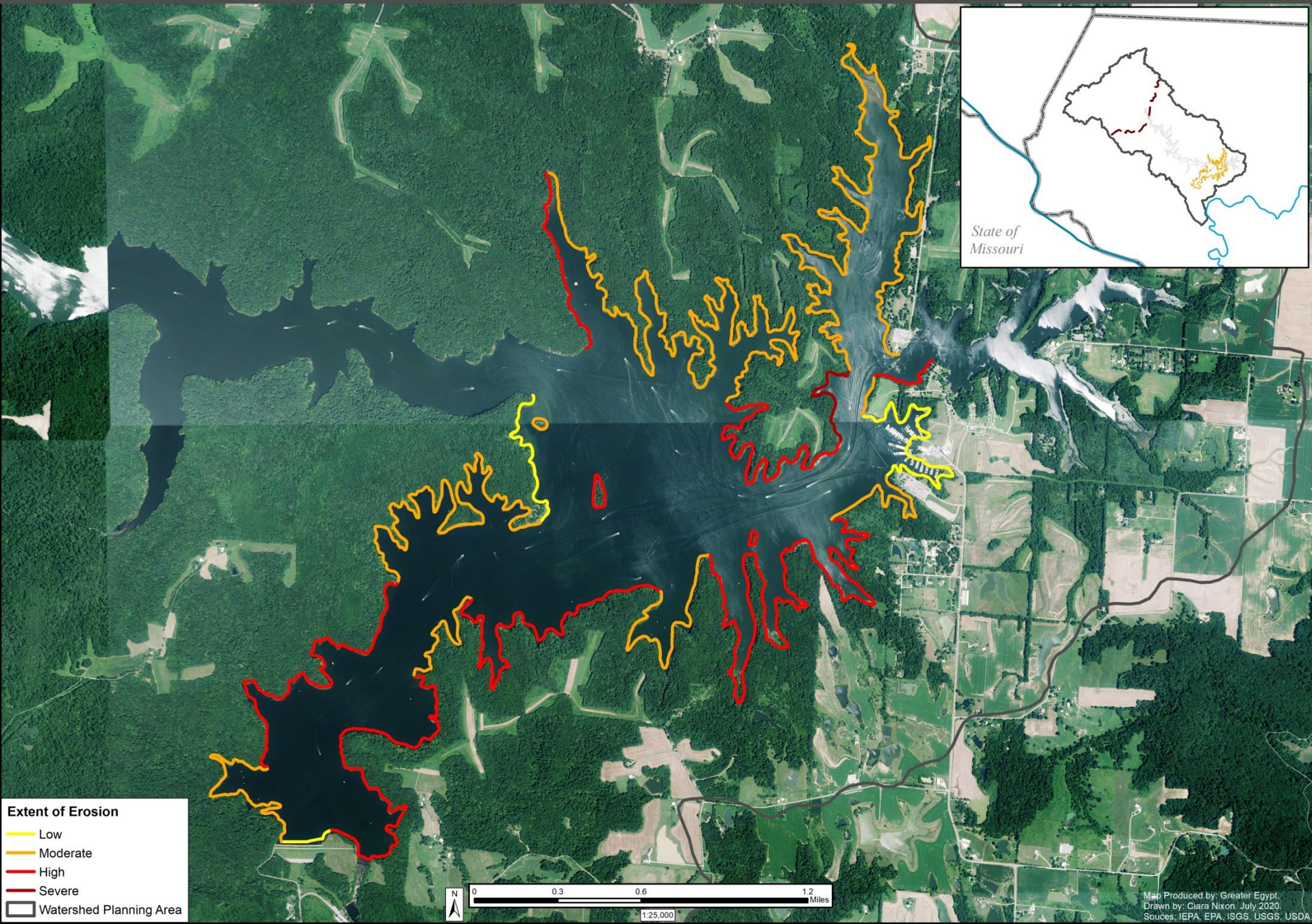




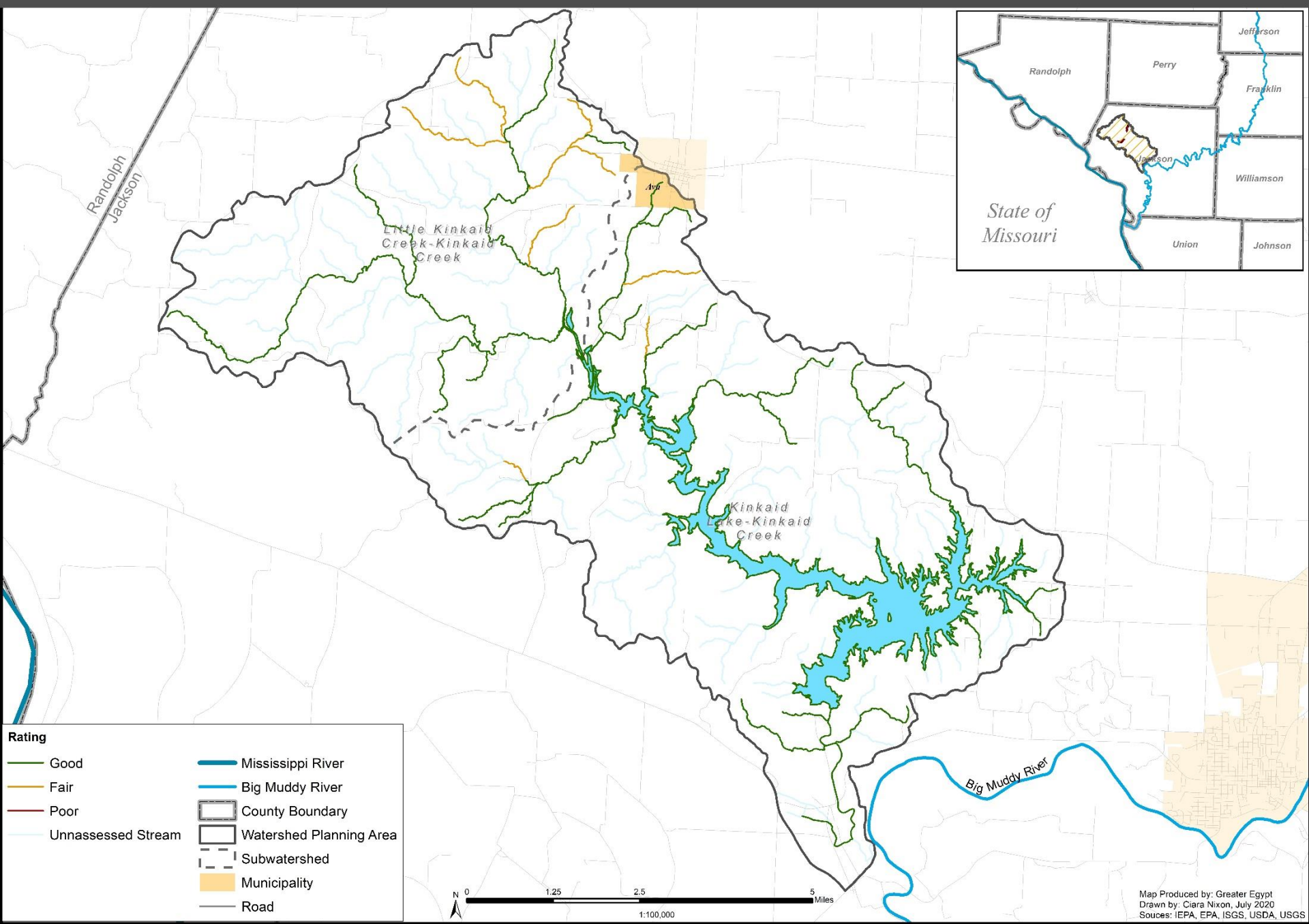
Kinkaid Creek Watershed Planning Area - Extent of Erosion



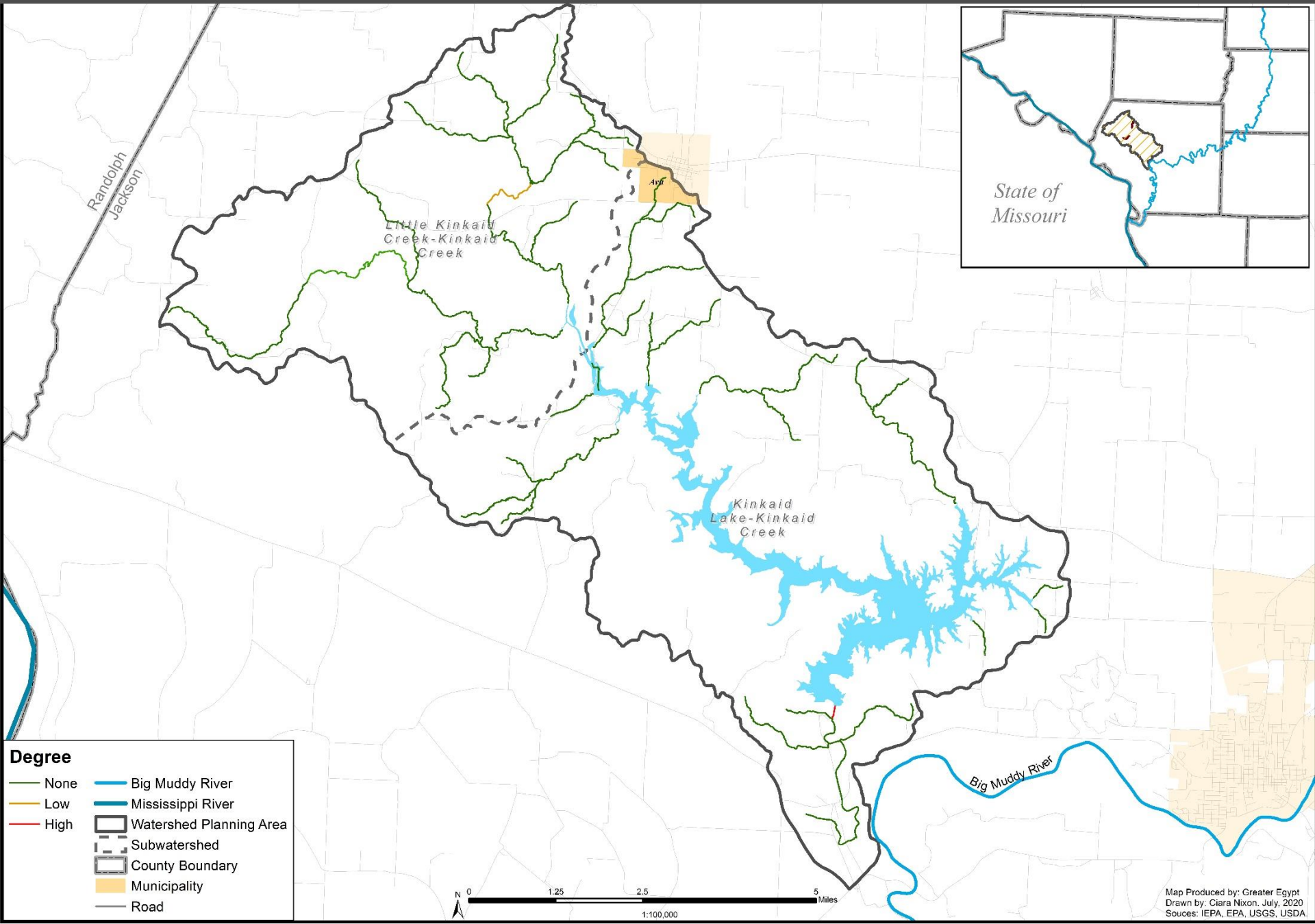
Kinkaid Lake-Central Body Section - Erosion Assessment



Kinkaid Creek Watershed Planning Area - Riparian and Littoral Condition



Kinkaid Creek Watershed Planning Area - Degree of Channelization

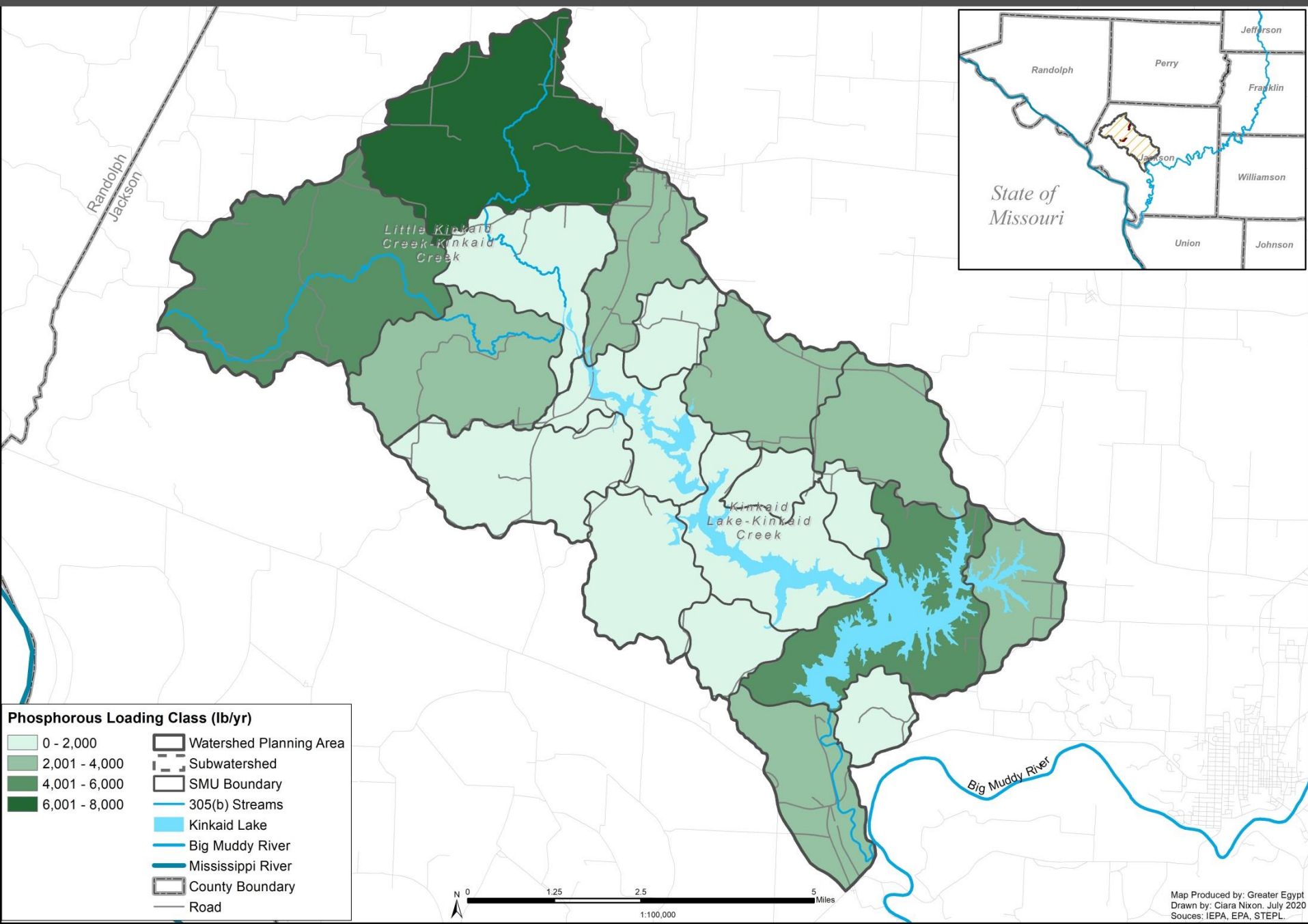


Estimated Pollutant Loads

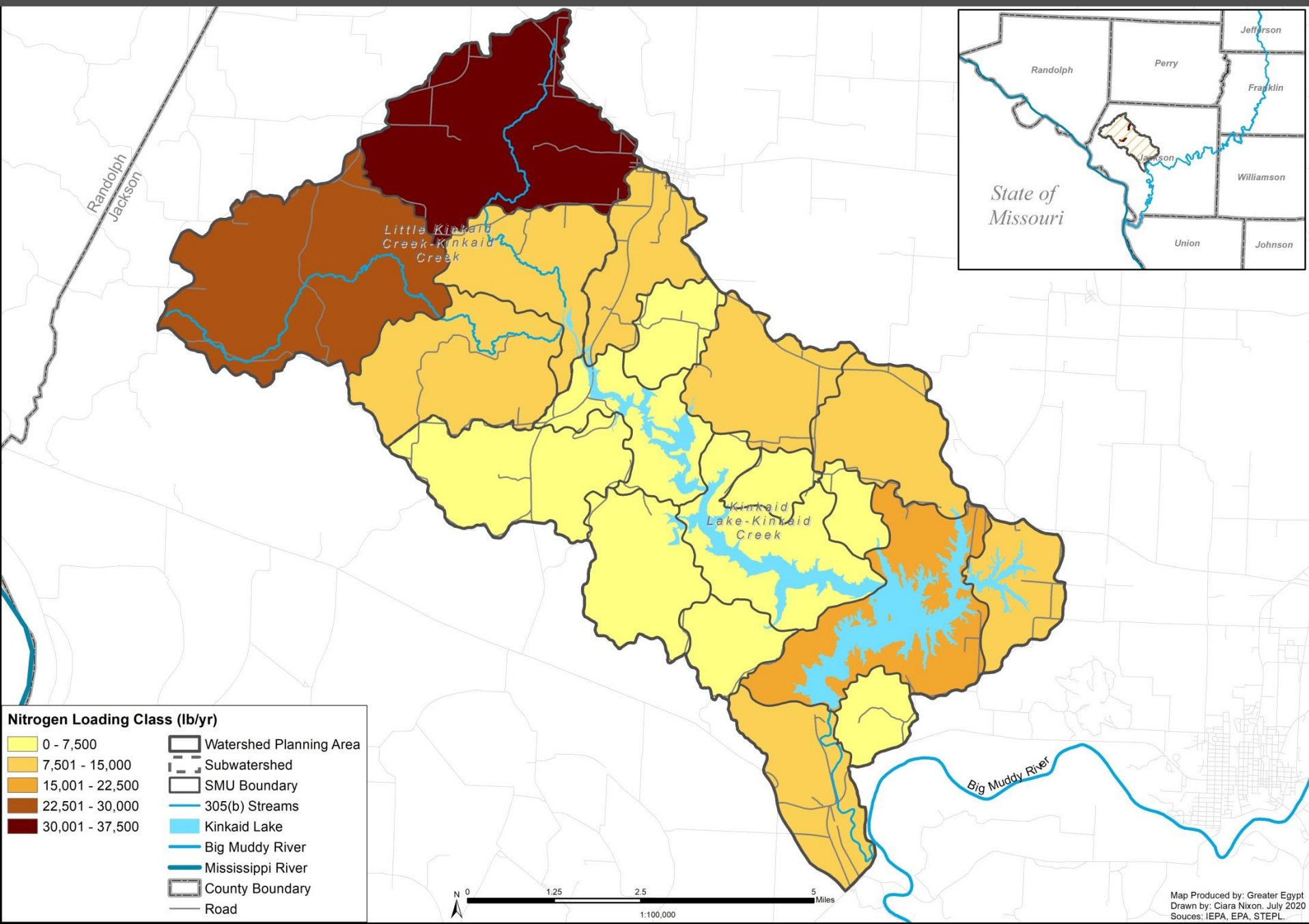
- Spreadsheet Tool For Estimating Pollutant Loads (STEPL)

Source	N Load (lb/yr)	Percent of Total Load	P Load (lb/yr)	Percent of Total Load	Sediment Load (t/yr)	Percent of Total Load
Urban	11,832.86	5.95%	1,820.87	4.39%	271.96	0.77%
Cropland	43,772.39	22.02%	13,645.37	32.90%	9,265.99	26.36%
Pastureland	46,777.47	23.54%	6,789.55	16.37%	3,307.70	9.41%
Forest	7,370.98	3.71%	3,352.98	8.08%	903.57	2.57%
Streambank	34,245.29	17.23%	13,184.43	31.79%	21,405.91	60.89%
Groundwater	54,740.79	27.54%	2,681.41	6.47%	0.00	0.00%
Total	198,739.78	-	41,474.60	-	35,155.12	-

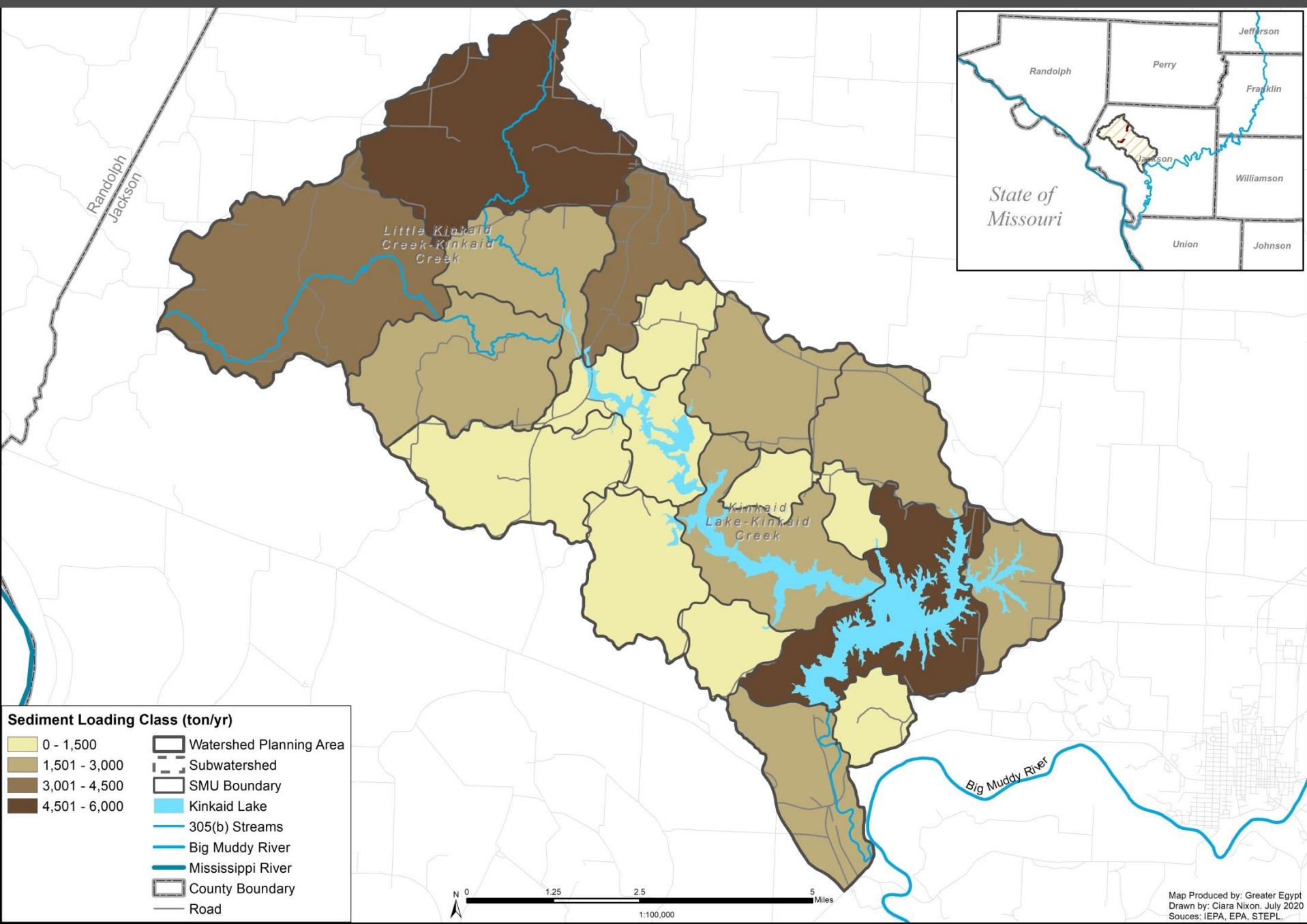
Kinkaid Creek Watershed Planning Area - Phosphorous Load Analysis



Kinkaid Creek Watershed Planning Area - Nitrogen Load Analysis



Kinkaid Creek Watershed Planning Area - Sediment Load Analysis



Set Water Quality Goals and Load Reduction Targets

- Achieve water quality standards and total maximum daily loads for specific pollutants
- Identify load reduction targets for specific nutrients/ pollutants
 - Phosphorus
 - Nitrogen
 - Sediment
- Base nutrient reduction goals off of the IL Nutrient Loss Reduction Strategy

Waterbody	Assessment Unit ID	Size	Causes of Impairment(s)	Sources of Impairment(s)
Kinkaid Lake	IL_RNC	3,475 ac	Mercury	Atmospheric Deposition-Toxics, Source Unknown

IL Nutrient Loss Reduction Strategy (ILNLRs)

- Collaborative effort between IEPA, IL Dept. of Agriculture, and the IL NLRs Policy Working Group and subcommittees
- Develop strategies and promote best management practices (BMP) for nutrient runoff
- Goals include: 25% reduction in phosphorus load (2025)

15% reduction in nitrate-nitrogen load (2025)

Eventual goal is 45% for both nutrients

Load Reduction Targets

Subwatershed	Nitrogen (percent of total)	Nitrogen Load Reduction Target	Phosphorus (percent of total)	Phosphorus Load Reduction Target	Sediment (percent of total)	Sediment Load Reduction Target
Kinkaid Creek	15%	29,810.97	25%	10,368.65	25%	8,788.78
Subwatershed Load Reduction Targets						
Little Kinkaid Creek- Kinkaid Creek	44.05%	13,132.49	40.04%	4,151.15	37.48%	3,294.01
Kinkaid Lake- Kinkaid Creek	55.95%	16,678.48	59.96%	6,217.51	62.52%	5,494.77
Total	-	29,811.0	-	10,368.7	-	8,788.8

Concerns Within the Watershed

EPA 303d List of Impaired Waters

- Kinkaid Lake
 - Mercury
 - Erosion

Other Waterbodies

- Kinkaid Creek
- Little Kinkaid Creek
- Johnson Creek
- Spring Creek

Waterbody	Assessment Unit ID	Causes of Impairment(s)	Sources of Impairment(s)
Kinkaid Lake	IL_RNC	Mercury	Atmospheric Deposition-Toxics, Source Unknown

Kinkaid Creek Watershed TMDL Report (2008)

- Collaboration between agencies and citizens
- Goals focused on:
 - Water quality of impaired waterbodies
 - Identifying potential sources of pollutants
 - Determining loading capacity of pollutants
 - Reducing exceeding maximum daily loads
- Solutions proposed were various TMDL approaches
 - Reduce the amount of sediment
 - Stabilize eroded shoreline
 - Control invasive exotic plant species
 - Remove accumulated sediment

Preliminary Goals

- Erosion along streambank/shoreline
- Address 303(d) Impairments:
 - Mercury
- Address runoff from urban/agricultural areas
- Encourage BMP for agricultural areas
- Increase public involvement
- Other goals?

Needs from the Planning Committee

- Attend future planning meetings
- Propose Best Management Practices (BMP)
- Give knowledge of watershed issues and concerns
- Guidance on education/outreach component of plan
- Technical support (if available)
- Review work of the Kinkaid Creek Watershed-based Plan

Meeting Schedule

MEETING 1	Introduction of Plan Elements and Watershed Inventory	February 18, 2021
MEETING 2	Best Management Practices and Remaining Plan Elements	March, 2021
MEETING 3	Prioritization of Best Management Practices	May, 2021
MEETING 4	Draft Plan Review	June, 2021
	Final Draft DUE	August 1, 2021

Questions/Comments

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