

Western Crab Orchard Creek Watershed Planning Committee Meeting 1

November 19, 2020
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 Western Crab Orchard 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

Ciara Nixon
Planner

Noah Scalero
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

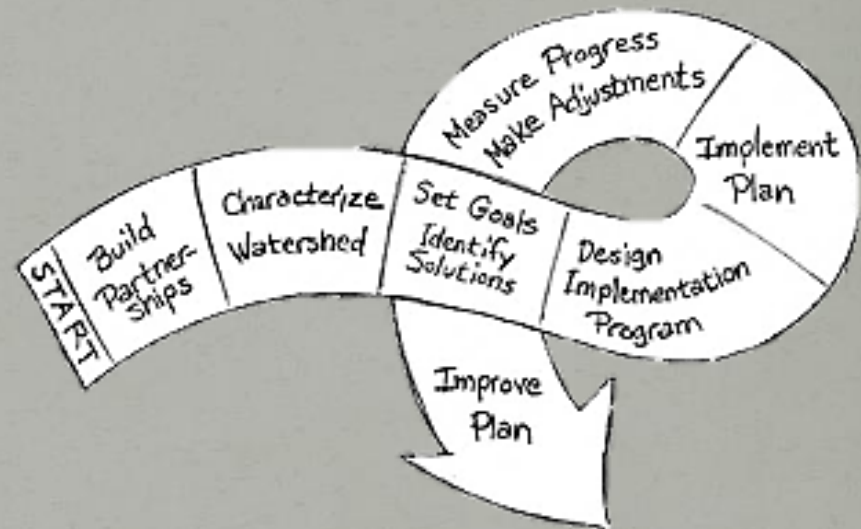
Initial Stakeholders Meeting Review

August 27, 2020- Virtual

- Staff reviewed Inventory and Assessment/ Watershed-based Planning Components
 - What would the source of methoxychlor be?
 - “This chemical is now banned by EPA. It used to be used on crops as insecticide.”
 - How does this tie into NARP planning?
 - “NARP and watershed planning have similar goals: reduce nutrients in watersheds and waterbodies. Planning group participants also qualify for NPDES requirements for NARP planning.”
 - If we want to visit a location of concern on your maps, would someone be available to help us find the area on the ground?
 - “Let us know what site you would like to visit, and we can give you the information.”

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

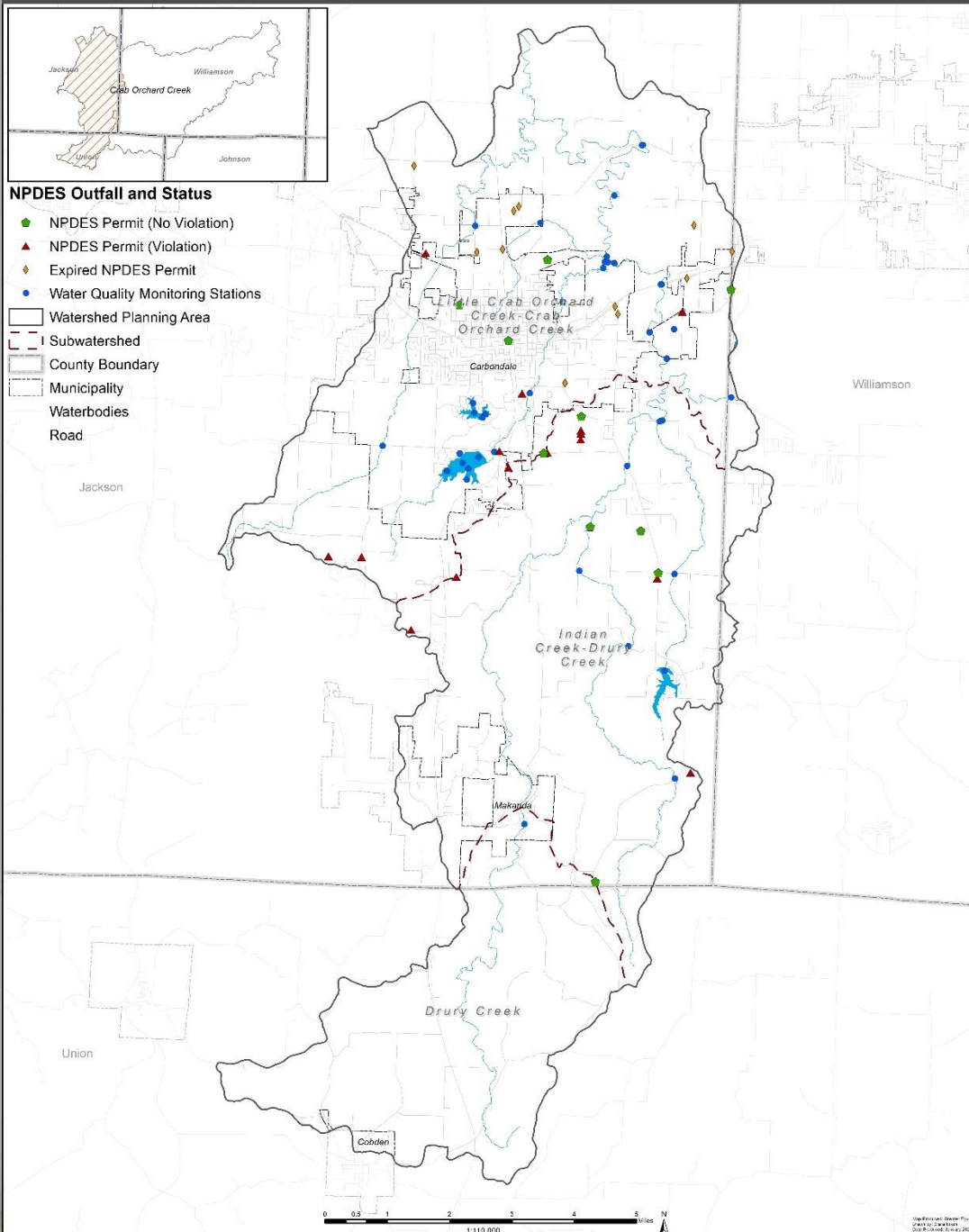
Nonpoint Source Pollution

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



CropLife.ca

Western Crab Orchard Creek Watershed - NPDES Outfall Locations



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.

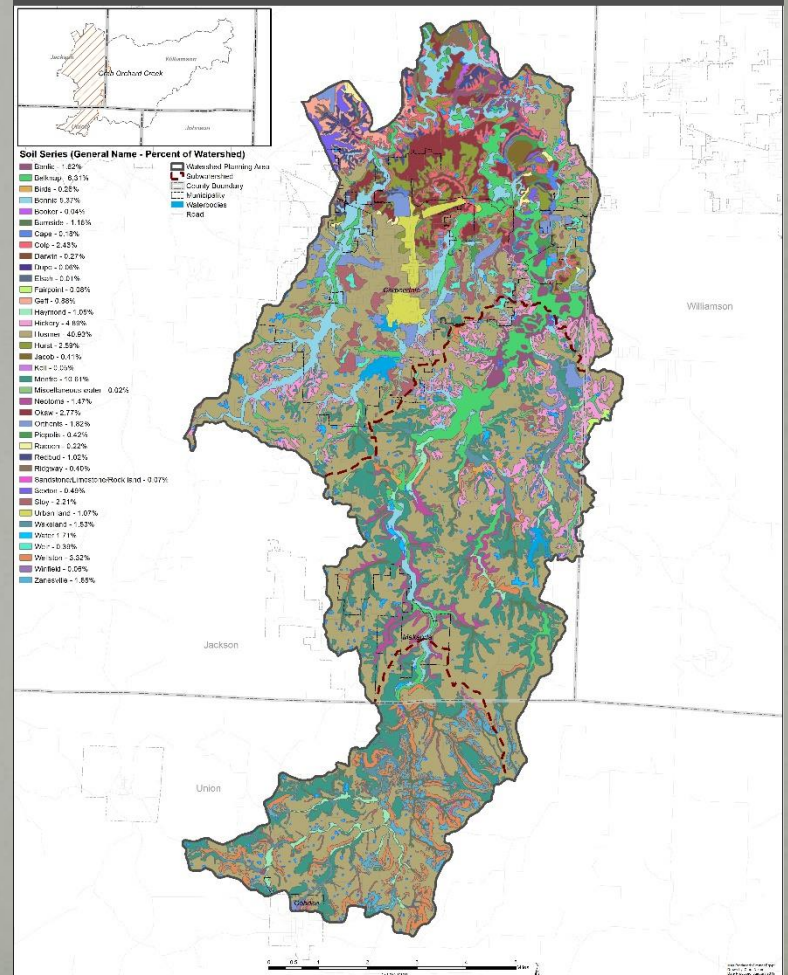
Elements of a Successful Watershed-based Plan

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

Western Crab Orchard Creek - Generalized Soil Series



Elements of a Successful Watershed-based Plan

2.) Set water quality goals and load reduction targets

Water Quality Goals could include:

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

Waterbody	Causes of Impairment(s)	Sources of Impairment(s)
Piles Fork	Alteration in stream-side or littoral vegetative covers, Methoxychlor, Other flow regime alterations, Dissolved Oxygen	Highway/Road/Bridge Runoff (Non-construction related), Impacts from Hydrostructure Flow Regulations/modification, Streambank Modifications/destabilization, Urban Runoff/Storm Sewers, Upstream Impoundments
Campus Lake	Mercury, Polychlorinated biphenyls, Total Suspended Solids(TSS), Phosphorus(Total)	Atmospheric Deposition-Toxics, Source Unknown, Other Spill Related Impacts, Waterfowl, Urban Runoff/Storm Sewers, Runoff from Forest/Grassland/Parkland
Carbondale City Lake	Mercury, Total Suspended Solids(TSS), Phosphorus (Total)	Atmospheric deposition-Toxics, Source Unknown, Littoral/shore Area Modifications (Non-riverine), Municipal Point Source Discharges, Urban Runoff/Storm Sewers, Runoff from Forest/Grassland/Parkland

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 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
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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

Elements of a Successful Watershed-based Plan

7.) Identify milestones to determine if management measures are being implemented on schedule

Interim Measurable Milestones				
Goal	Indicator	Short (2-year)	Mid (6-yr)	Long (10-yr)
Address Impairments from Agricultural Practices/ Improve Water Quality	Linear Feet of Streambank Stabilized	-	7,000	14,000
	Agricultural Strips Created	-	6	12
	Acres Converting to Conservation Tillage	-	70	140
	Acres to Implement Cover Crops	-	70	140
	Grassed Waterways Created	-	5	10
	Acres of No Mow Pastures	150	300	600
	Riparian Buffers Created	-	1	2
	Stream Channel Sediment Reduction Channels Created	-	2	5
Improve Recreational Opportunities	Improve Ramp and Dock at Herrin Reservoir	-	-	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	11,527	10	2,789	15	2,359
10 Year (Phase III)	15	24,701	25	6,971	30	4,718

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 HUCs

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	Crab Orchard Creek	0714010608
Subwatershed	6	12	40	160,000	Little Crab Orchard Creek	071401060809

Western Crab Orchard Creek Watershed

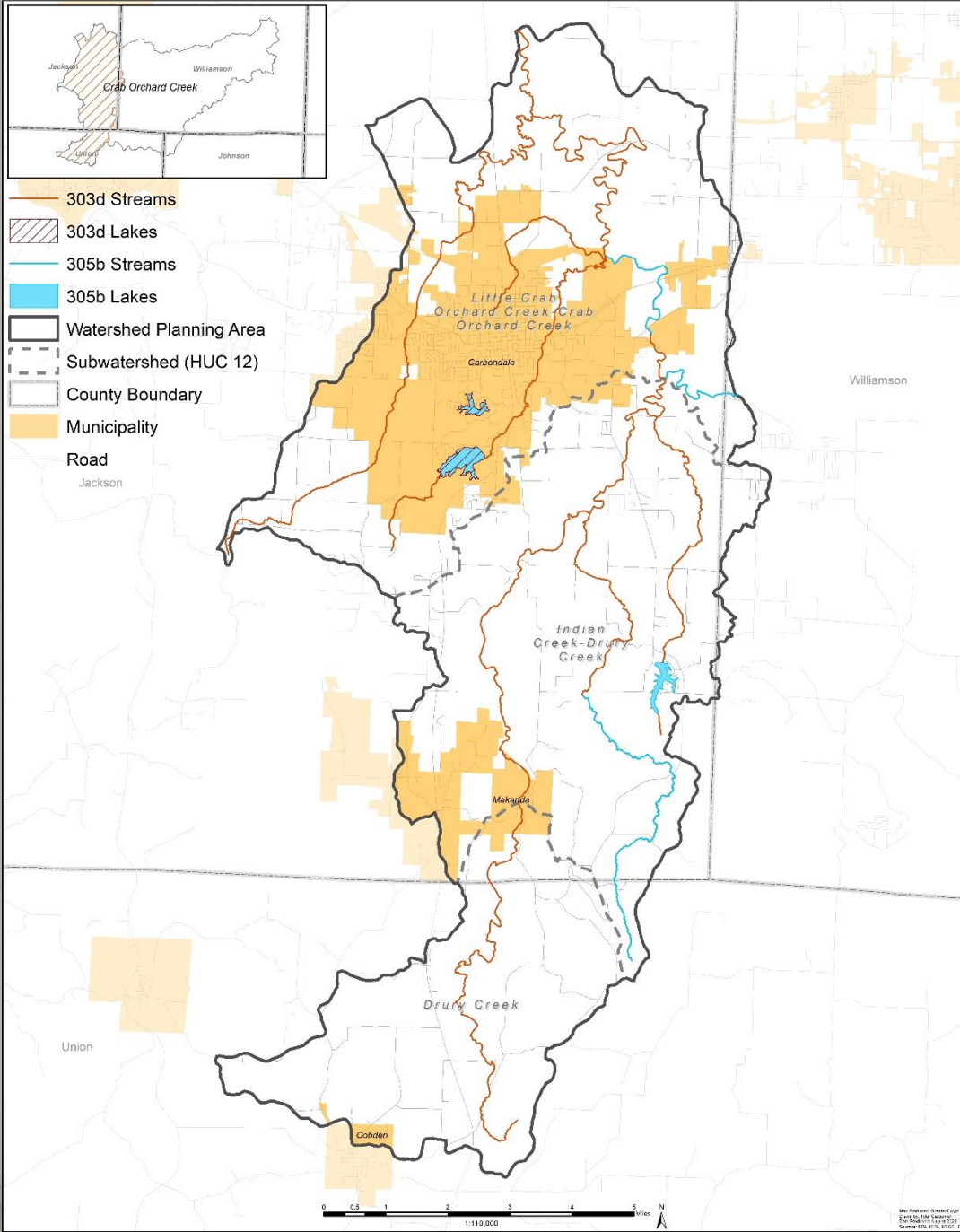
Quick facts:

- 56,533 acres, or 88 square miles
- Located in Jackson, Williamson and Union Counties
- Three separate HUC 12 watersheds:
 - Little Crab Orchard Creek
 - 24,539 ac
 - Indian Creek- Drury Creek
 - 20,018 ac
 - Drury Creek
 - 11,454 ac

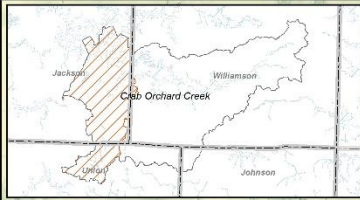
Municipalities include:

- Carbondale
- Makanda
- Cobden
- Detailed information can be found in the watershed inventory and assessment
 - Available on our site
 - [Western Crab Orchard Creek Watershed Inventory and Assessment](#)

Western Crab Orchard Creek - Planning Area



Western Crab Orchard Creek - Elevation and Floodplain



Elevation (feet)

High : 889

Low : 353

Floodplain

Waterbodies

Watershed Planning Area

Subwatershed

Municipality

County Boundary

Jackson

Union

Williamson

Johnson

Indian Creek-Drury Creek

Drury Creek

Williamson

Union

Jackson

Williamson

Union

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Floodplain

Waterbodies

Watershed Planning Area

Subwatershed

Municipality

County Boundary

Jackson

Union

Williamson

Johnson

Indian Creek-Drury Creek

Drury Creek

Williamson

Union

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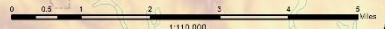
Union

Jackson

Williamson

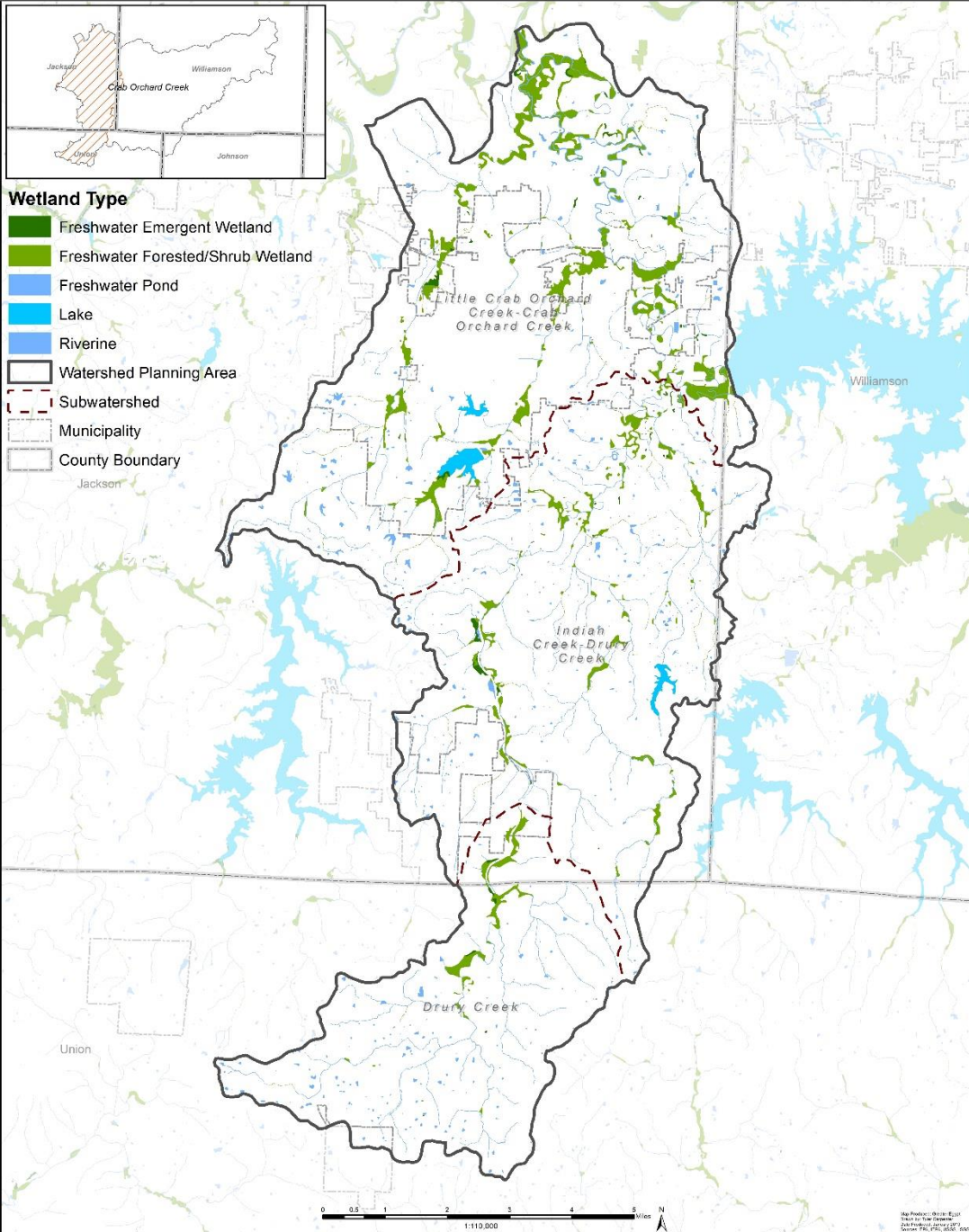
Union

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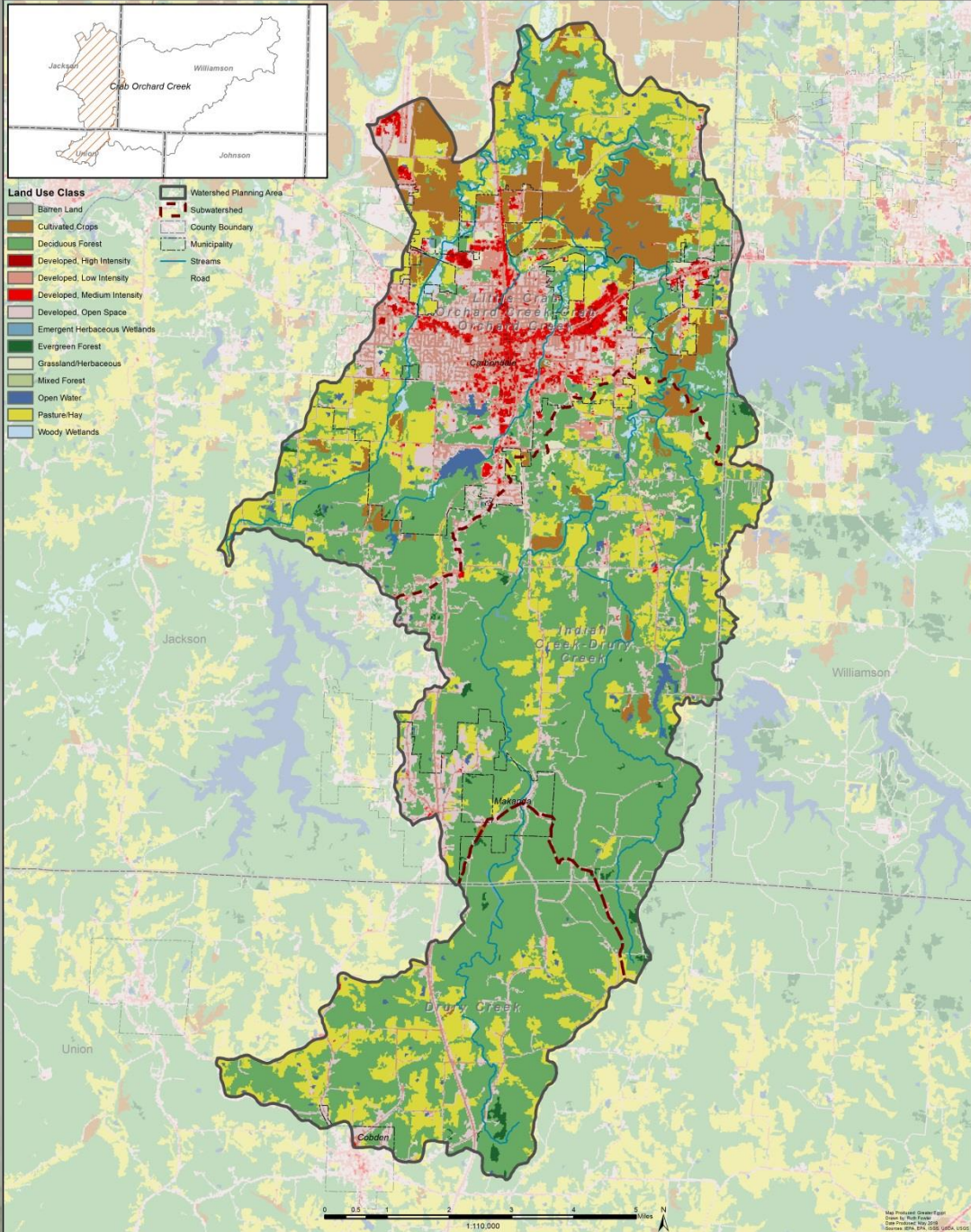


Map of the Crab Orchard Creek
Watershed Planning Area
Scale: 1:110,000
Date: 10/15/2010

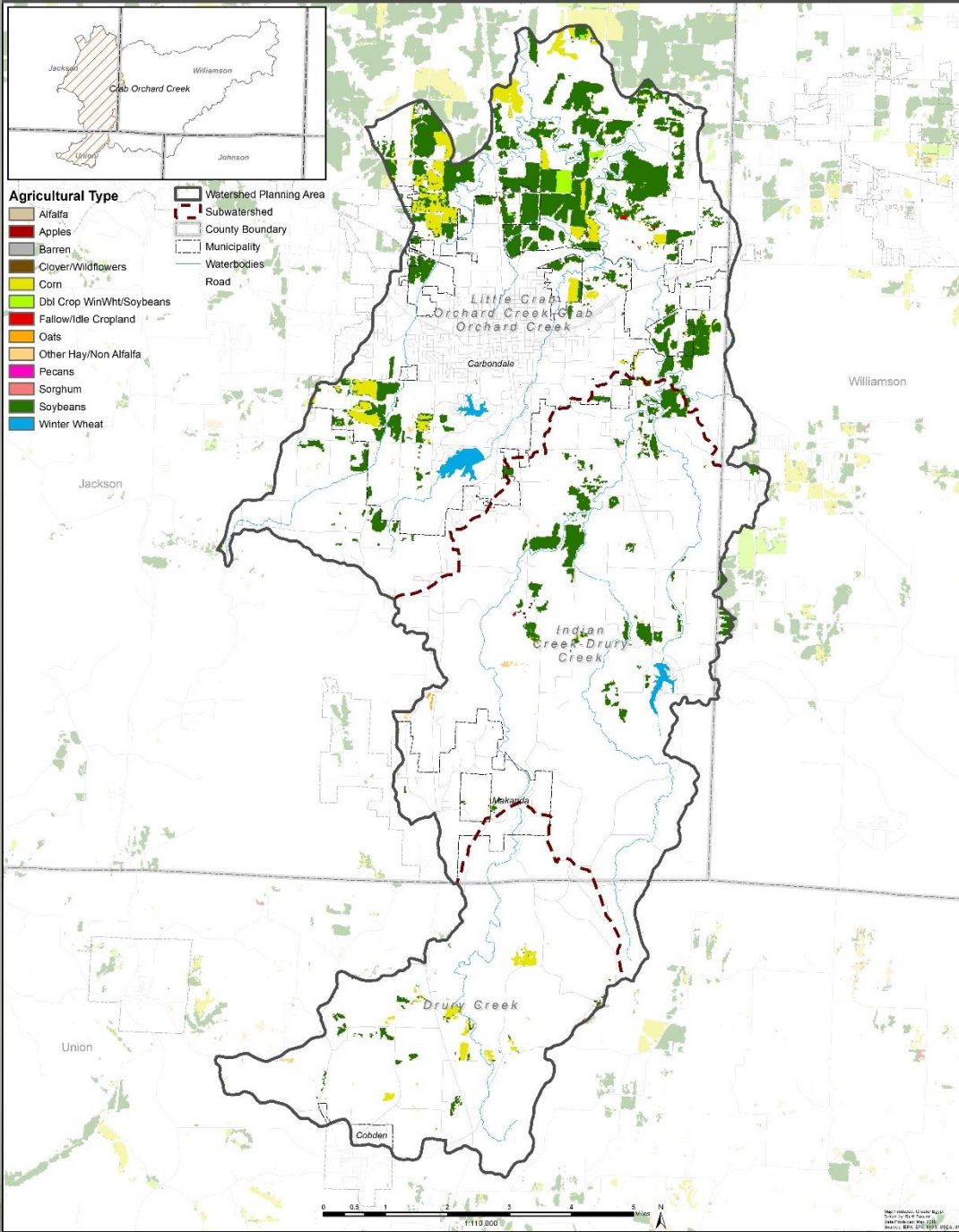
Western Crab Orchard Creek - Wetlands



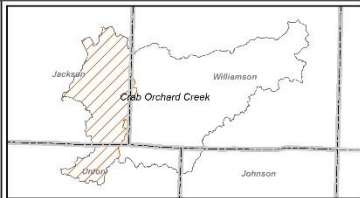
Western Crab Orchard Creek - Land Use



Western Crab Orchard Creek - Agriculture



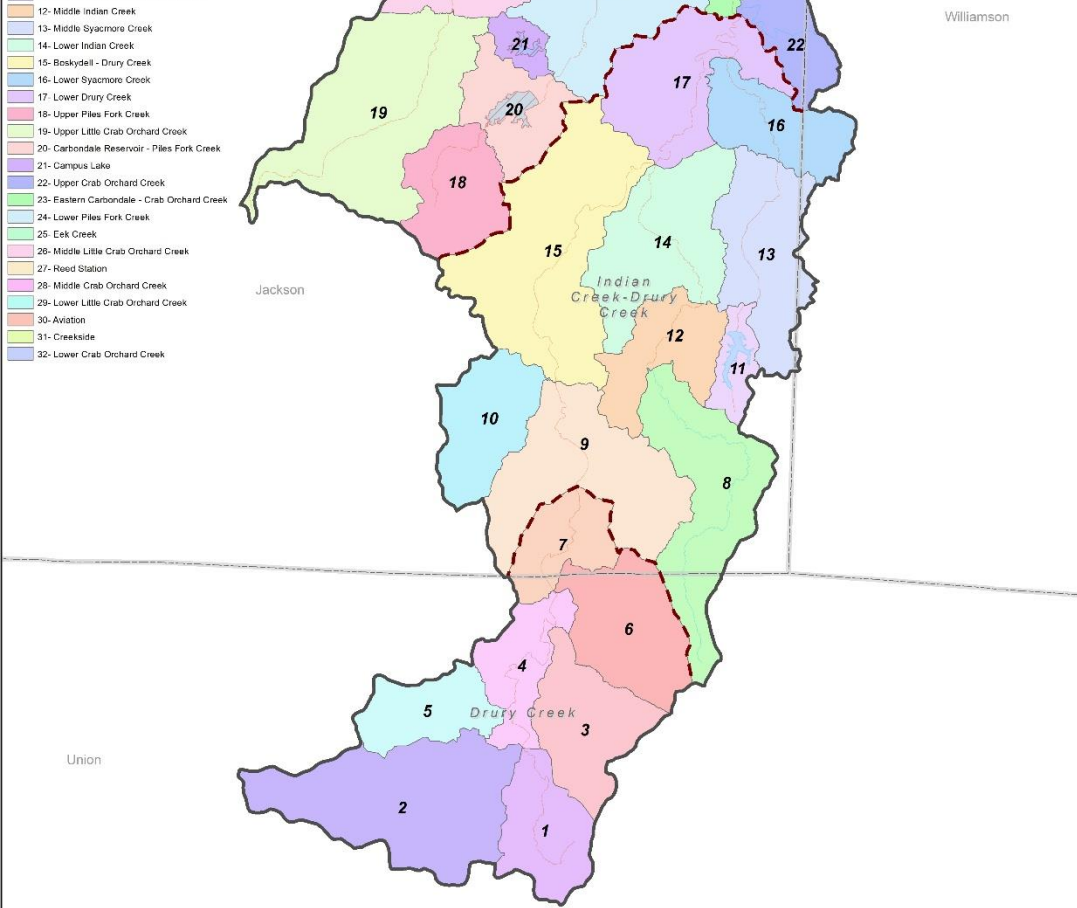
Western Crab Orchard Creek - Subwatersheds



Subwatersheds

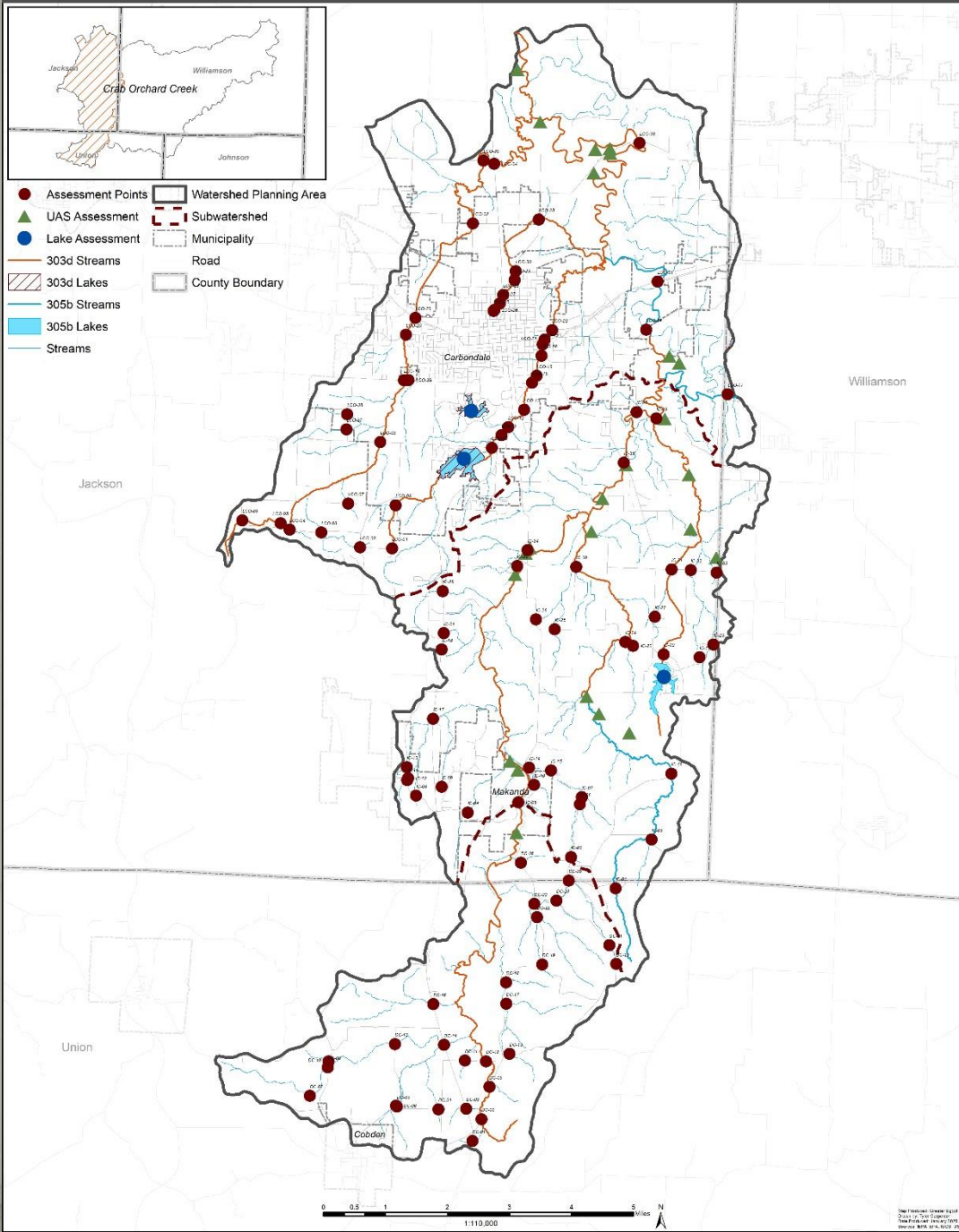
- 1- Upper Drury Creek
- 2- Cobden - North
- 3- Shiloh
- 4- Shawnee - Drury Creek
- 5- Flamm
- 6- Giant City
- 7- Makanda - South- Drury Creek
- 8- Upper Indian Creek
- 9- Middle Drury Creek
- 10- Makanda - North
- 11- Upper Sycamore Creek - Spring Arbor
- 12- Middle Indian Creek
- 13- Middle Sycamore Creek
- 14- Lower Indian Creek
- 15- Boskydel - Drury Creek
- 16- Lower Sycamore Creek
- 17- Lower Drury Creek
- 18- Upper Piles Fork Creek
- 19- Upper Little Crab Orchard Creek
- 20- Carbondale Reservoir - Piles Fork Creek
- 21- Campus Lake
- 22- Upper Crab Orchard Creek
- 23- Eastern Carbondale - Crab Orchard Creek
- 24- Lower Piles Fork Creek
- 25- Eek Creek
- 26- Middle Little Crab Orchard Creek
- 27- Reed Station
- 28- Middle Crab Orchard Creek
- 29- Lower Little Crab Orchard Creek
- 30- Aviation
- 31- Creekside
- 32- Lower Crab Orchard Creek

- 303d Streams
- 305b Streams
- 303d Lakes
- 305b Lakes
- Watershed Planning Area
- Subwatershed
- Municipality
- County Boundary



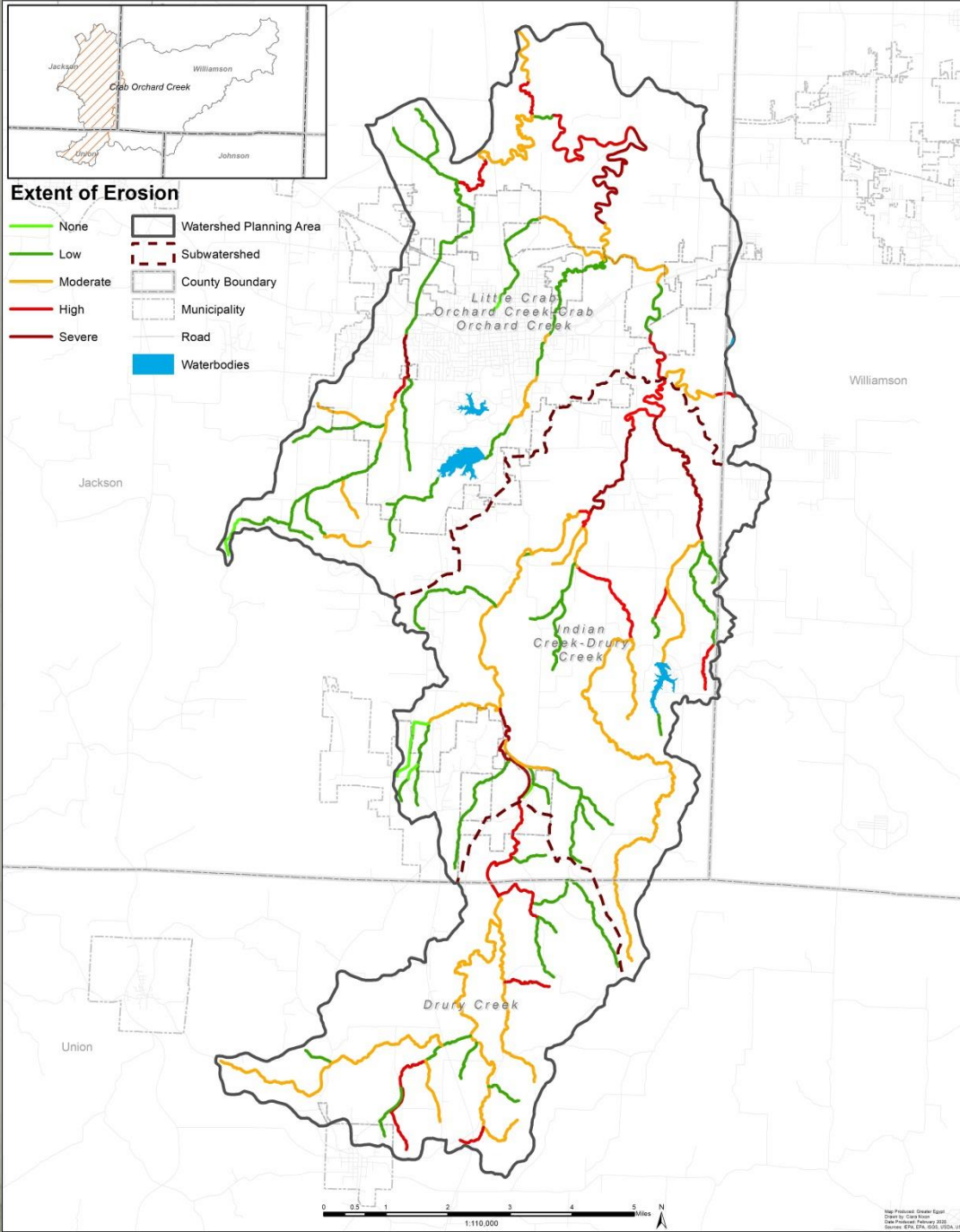
Map Prepared: October 2008
 County: Jackson
 City: Cobden
 State: Illinois
 Date: 10/20/08

Western Crab Orchard Creek - Assessed Waterbodies





Western Crab Orchard Creek - Erosion Assessment

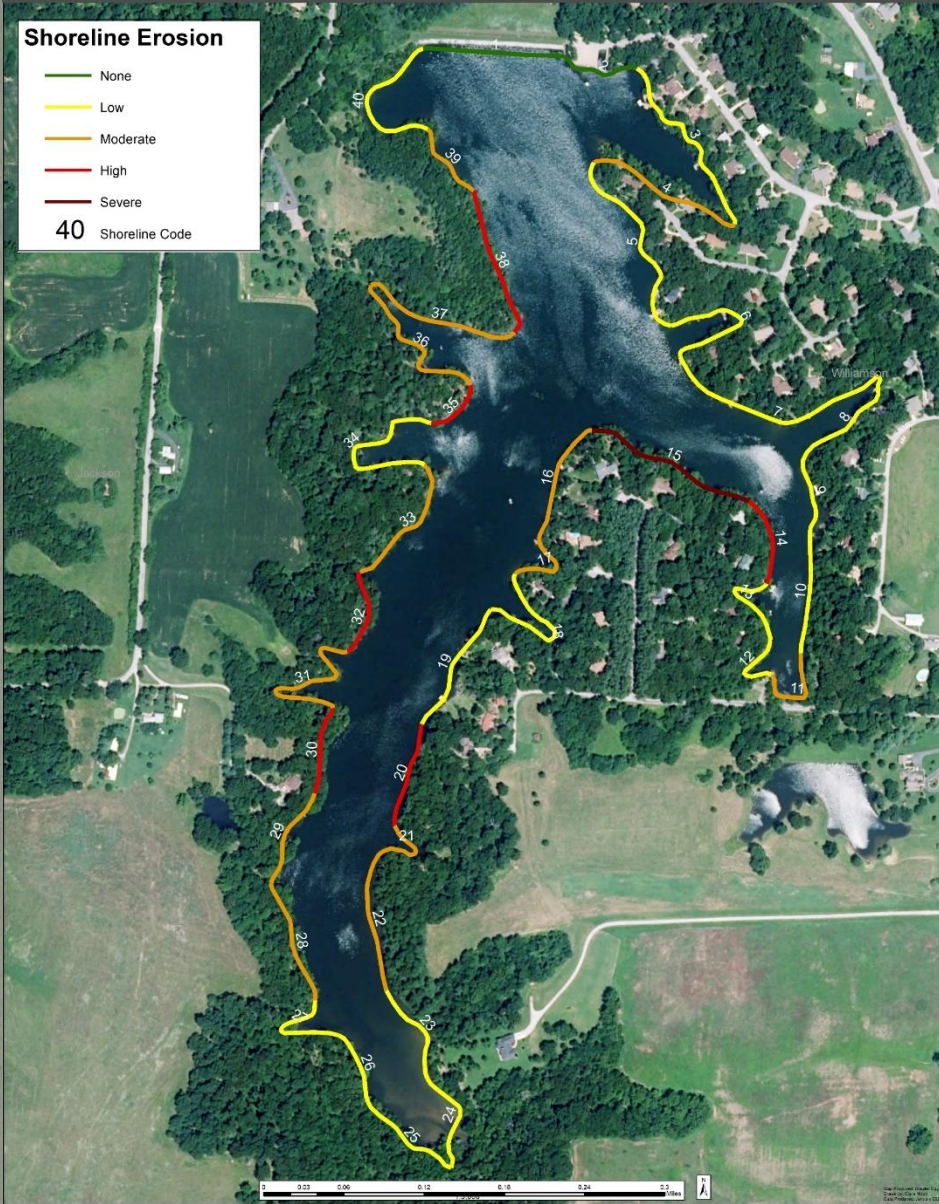


Spring Arbor Lake-Erosion Assessment

Shoreline Erosion

- None
- Low
- Moderate
- High
- Severe

40 Shoreline Code



Campus Lake- Erosion

Shoreline Erosion

- None
- Low
- Moderate
- High

10 Shoreline Code

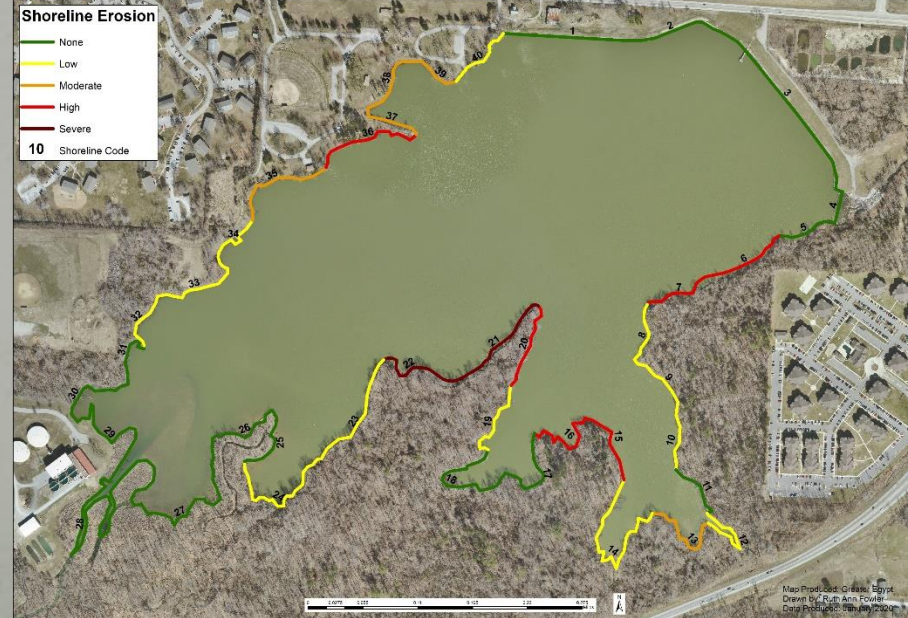


Carbondale Reservoir- Erosion

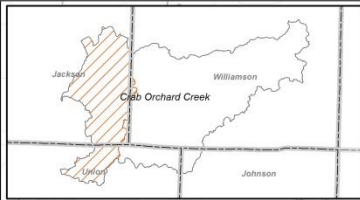
Shoreline Erosion

- None
- Low
- Moderate
- High
- Severe

10 Shoreline Code

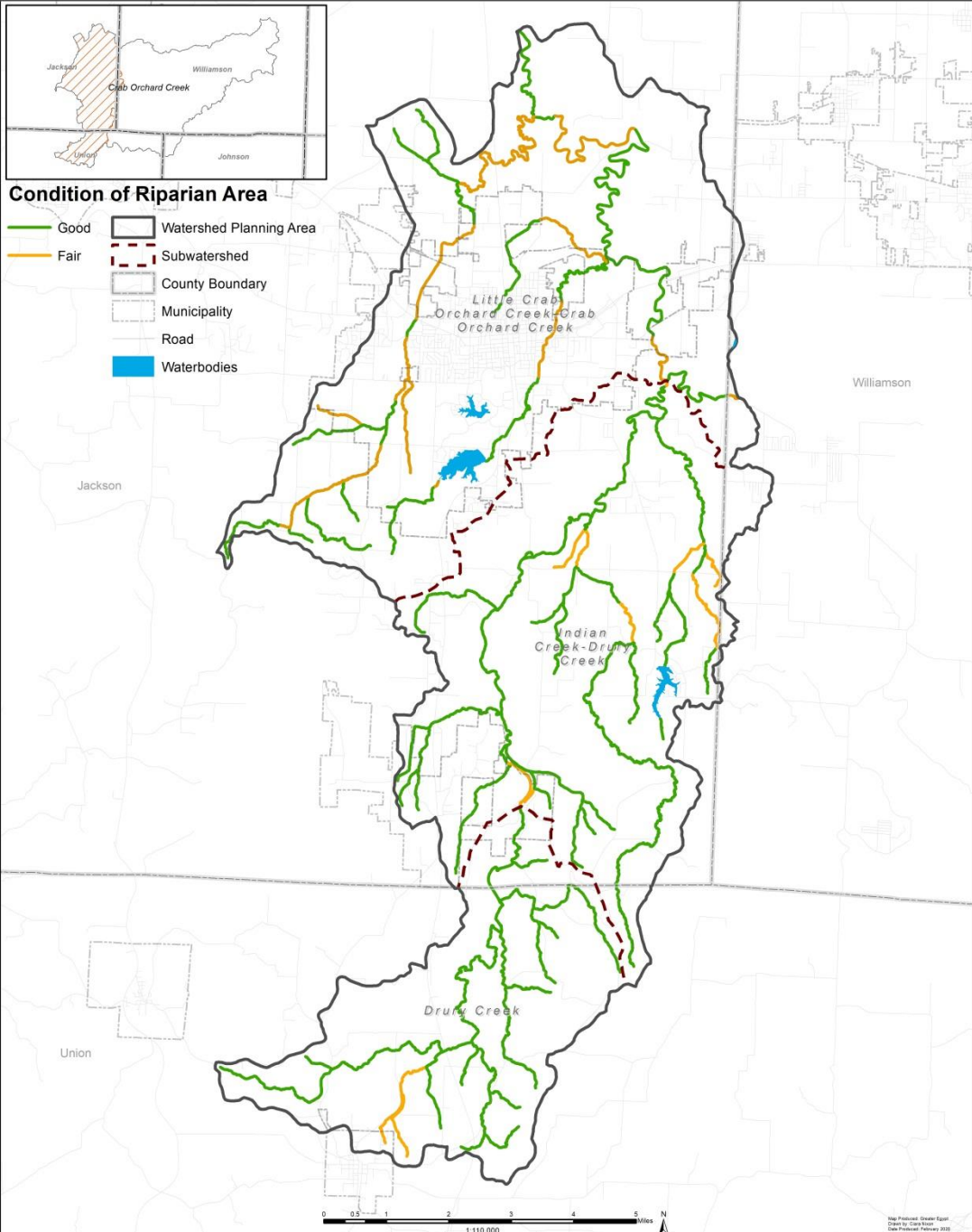


Western Crab Orchard Creek - Riparian Assessment



Condition of Riparian Area

- Good
- Fair
- Watershed Planning Area
- Subwatershed
- County Boundary
- Municipality
- Road
- Waterbodies



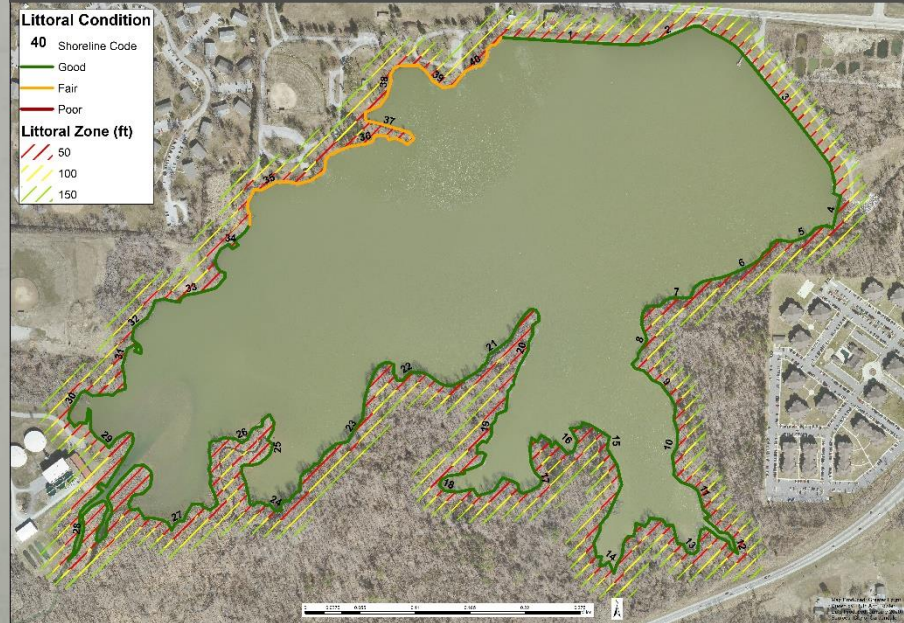
Spring Arbor Lake- Littoral Condition



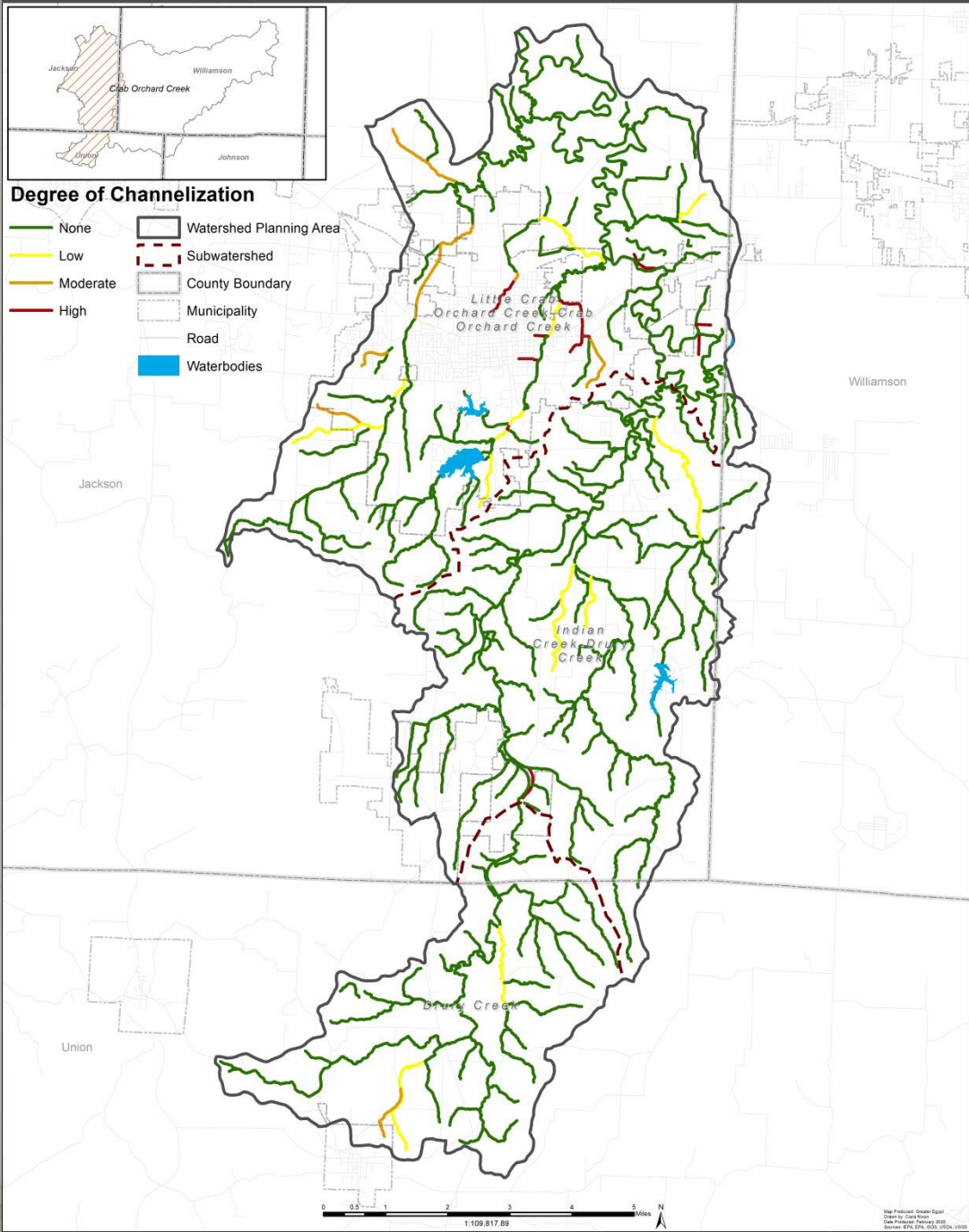
Campus Lake- Littoral Condition



Carbondale Reservoir- Littoral Condition



Western Crab Orchard Creek - Channelization Assessment

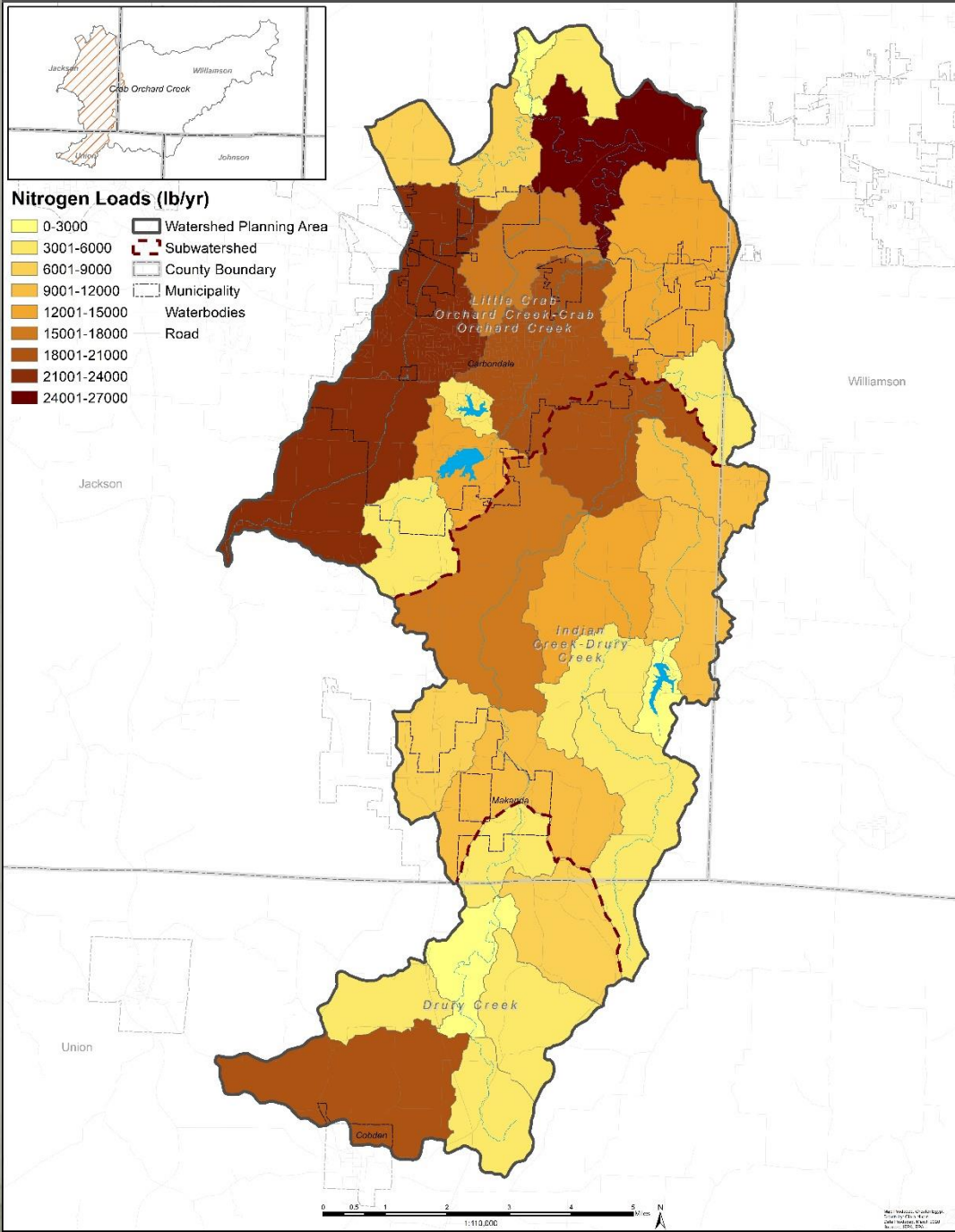


Estimated Pollutant Loads

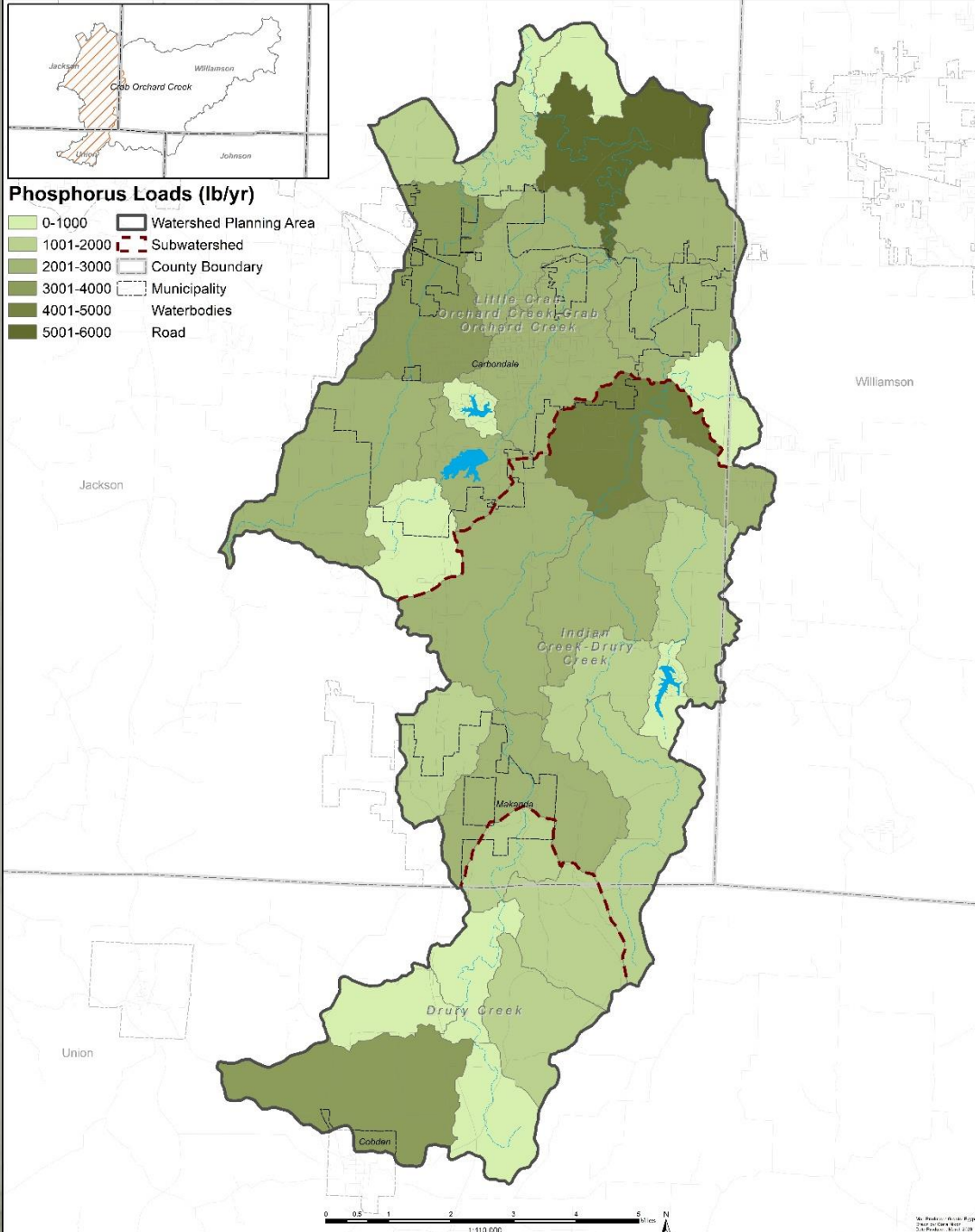
- Spreadsheet Tool For Estimating Pollutant Loads (STEPL)

Source	N Load (lb/yr)	Percent of Total Load	P Load (lb/yr)	Percent of Total Load	Sediment Load (tons/yr)	Percent of Total Load
Urban	81,390.36	24.88%	12,527.90	20.79%	1,870.49	3.91%
Cropland	31,256.72	9.56%	9,009.52	14.95%	5,606.23	11.71%
Pastureland	70,201.03	21.46%	8,968.51	14.88%	3,733.30	7.80%
Forest and Grassland	8,619.41	2.64%	3,998.50	6.63%	845.65	1.77%
Groundwater	78,323.21	23.94%	3,696.34	6.13%	0.00	0.00%
Streambank	57,308.84	17.52%	22,063.91	36.61%	35,818.03	74.82%
Total	327,099.55		60,264.68		47,873.69	

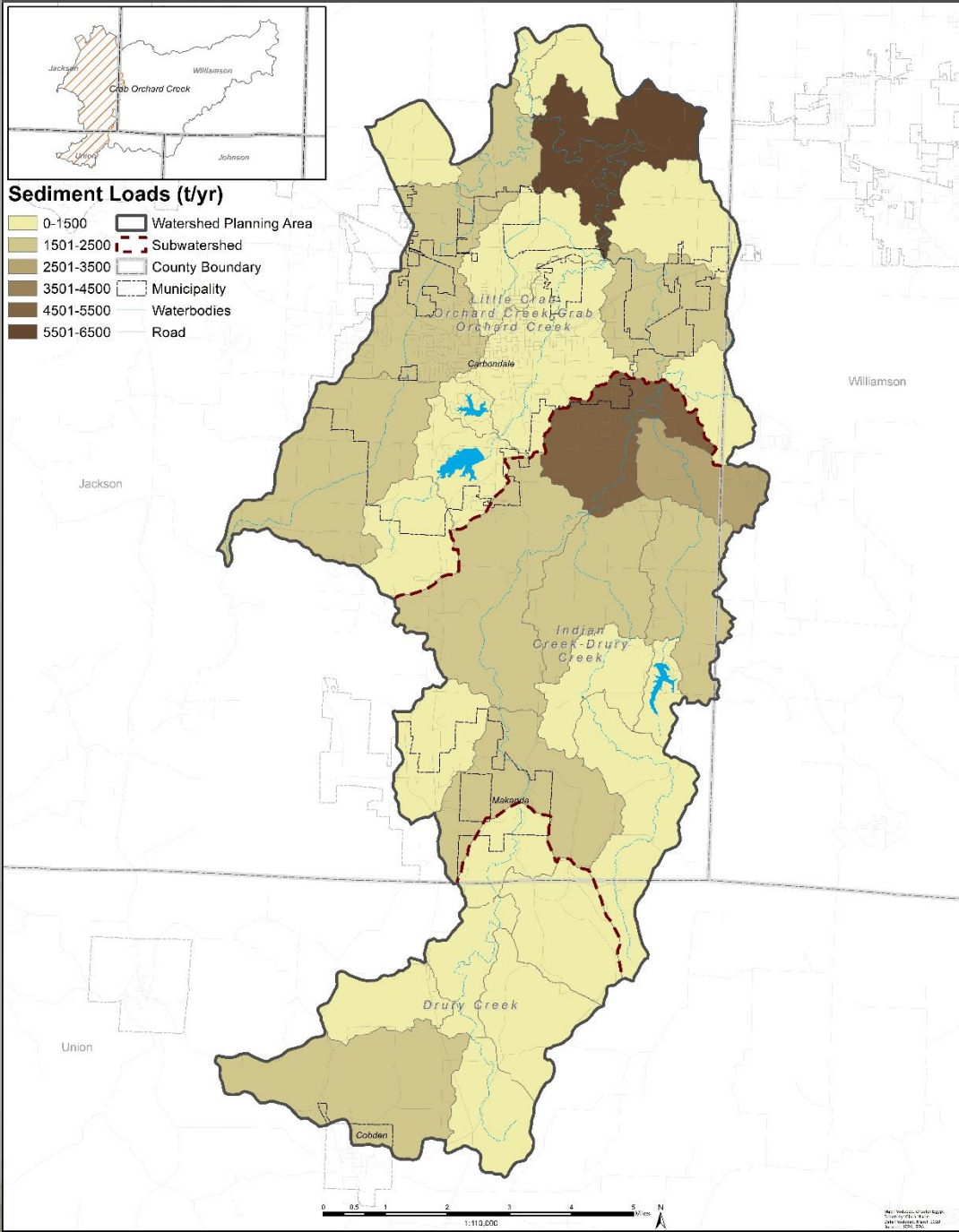
Western Crab Orchard Creek - Nitrogen Load



Western Crab Orchard Creek - Phosphorus Load



Western Crab Orchard Creek - Sediment Load



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)
Piles Fork	IL_NDB-03	7.2	Alteration in stream-side or littoral vegetative covers, Methoxychlor, Other flow regime alterations, Dissolved Oxygen	Highway/Road/Bridge Runoff (Non-construction related), Impacts from Hydrostructure Flow Regulations/modification, Streambank Modifications/destabilization, Urban Runoff/Storm Sewers, Upstream Impoundments
Campus Lake	IL_RNZH	41.2 ac	Mercury, Polychlorinated biphenyls, Total Suspended Solids(TSS), Phosphorus(Total)	Atmospheric Deposition-Toxics, Source Unknown, Other Spill Related Impacts, Waterfowl, Urban Runoff/Storm Sewers, Runoff from Forest/Grassland/Parkland

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

Watershed	SMU ID	Nitrogen (percent of total)	Nitrogen Load Reduction Target (lbs)	Phosphorus (percent of total)	Phosphorus Load Reduction Target (lbs)	Sediment (percent of total)	Sediment Load Reduction Target (tons)
Western Crab Orchard Creek	-	0.15	49,064.93	0.25	15,066.17	0.25	11,968.42
Subwatershed Load Reduction Targets							
Drury Creek	1.00	0.15	7,204.97	0.15	2,214.49	0.15	1,766.64
Indian Creek- Drury Creek	2.00	0.30	14,495.91	0.34	5,061.37	0.41	4,877.80
Little Crab Orchard Creek	3.00	0.56	27,364.06	0.52	7,790.31	0.44	5,323.98
TOTAL			49,064.93		15,066.17		11,968.42

Concerns Within the Watershed

EPA 303d List of Impaired Waters by Subwatershed:

Drury Creek Subwatershed:

- Drury Creek

Indian Creek Subwatershed:

- Indian Creek
- Sycamore Creek

Little Crab Orchard Creek Subwatershed:

- Big Muddy River
- Crab Orchard Creek
- Eek Creek
- Little Crab Orchard Creek – West
- Piles Fork Creek
- Carbondale City Lake
- Campus Lake

Crab Orchard Creek Subwatershed 303d Information

Waterbody	Assessment Unit ID	Causes of Impairment(s)	Sources of Impairment(s)
Big Muddy River	IL_N-16	Dissolved Oxygen, Sedimentation/Siltation, Mercury	Non-irrigated Crop Production, Natural Sources, Atmospheric Deposition- Toxics, Source Unknown
Crab Orchard Creek	IL-ND-01	Mercury	Atmospheric Deposition-Toxics, Source Unknown
Crab Orchard Creek	IL-ND-02	Manganese, Other flow regime alterations, Dissolved Oxygen	Source Unknown, Impacts from Hydrostructure Flow Regulations/modification, Upstream Impoundments
Crab Orchard Creek	IL-ND-11	Dissolved Oxygen, Cause Unknown	Source Unknown
Eek Creek	IL_NDBA-01	Alteration in stream-side or littoral vegetative covers, Dissolved Oxygen, Water Temperature, Loss of Instream Cover	Channelization, Industrial Land Treatment, Loss of Riparian Habitat, Rcra Hazardous Waste Sites, Crop Production (Crop Land or Dry Land), Agriculture, Habitat Modification- other than Hydromodification
Little Crab Orchard Creek- West	IL_NDA-01	Alteration in stream-side or littoral vegetative covers, Methoxychlor, Dissolved Oxygen	Loss of Riparian Habitat, Streambank Modifications/destabilization, Crop Production (Crop Land or Dry Land), Urban Runoff/Storm Sewers, Livestock (Grazing or Feeding Operations)
Piles Fork	IL_NDB-03	Alteration in stream-side or littoral vegetative covers, Methoxychlor, Other flow regime alterations, Dissolved Oxygen	Highway/Road/Bridge Runoff (Non-construction related), Impacts from Hydrostructure Flow Regulations/modification, Streambank Modifications/destabilization, Urban Runoff/Storm Sewers, Upstream Impoundments
Campus Lake	IL_RNZH	Mercury, Polychlorinated biphenyls, Total Suspended Solids(TSS), Phosphorus(Total)	Atmospheric Deposition-Toxics, Source Unknown, Other Spill Related Impacts, Waterfowl, Urban Runoff/Storm Sewers, Runoff from Forest/Grassland/Parkland
Carbondale City Lake	IL_RNI	Mercury, Total Suspended Solids(TSS), Phosphorus (Total)	Atmospheric deposition-Toxics, Source Unknown, Littoral/shore Area Modifications (Non-riverine), Municipal Point Source Discharges, Urban Runoff/Storm Sewers, Runoff from Forest/Grassland/Parkland

Indian Creek-Drury Creek Subwatershed 303d Information

Waterbody	Assessment Unit ID	Causes of Impairment(s)	Sources of Impairment(s)
Drury Creek	IL_NDC-02	Dissolved Oxygen	Acid Mine Drainage, Highway/Road/Bridge Runoff(Non-construction Related), Impacts from Abandoned Mine Lands (Inactive), Streambank Modifications/destabilization, Crop Production (Crop Land or Dry Land), Agriculture
Indian Creek	IL_NDCB-01	Alteration in stream-side or littoral vegetative covers, Low flow alterations, Dissolved Oxygen, Changes in Stream Depth and Velocity Patterns	Streambank Modifications/destabilization, Habitat Modification-other than Hydromodification, Loss of Riparian Habitat, Crop Production (Crop Land or Dry Land), Agriculture
Sycamore Creek	IL_NDCA	Dissolved Oxygen, pH	Acid Mine Drainage, Impacts from Abandoned Mine Lands (Inactive), Loss of Riparian Habitat, Crop Production (Crop Land or Dry Land), Agriculture

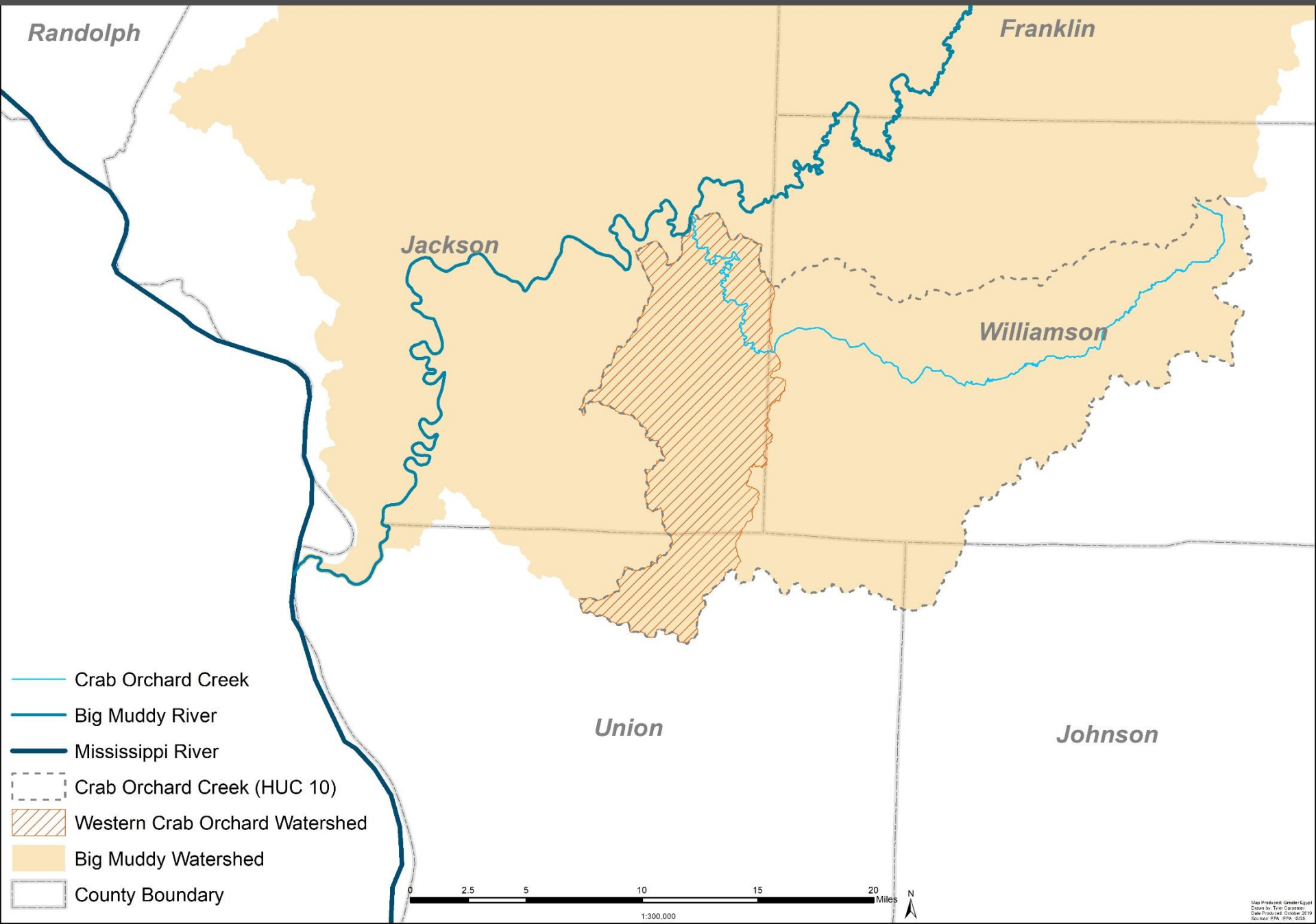
Drury Creek Subwatershed 303d Information

Waterbody	Assessment Unit ID	Causes of Impairment(s)	Sources of Impairment(s)
Drury Creek	IL-NDC-01	Alteration in stream-side or littoral vegetative covers, Dissolved Oxygen	Loss of Riparian Habitat, Source Unknown

Crab Orchard 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
 - If these are still relevant, they could be included in this plan

Western Crab Orchard Creek Watershed - Regional Location



Preliminary Goals

- Erosion along streambank/shoreline
- Address runoff from urban/agricultural areas
- Address 303(d) Impairments:
 - Dissolved Oxygen
 - pH
 - Sedimentation/Siltation
 - Mercury
 - Manganese
 - Water Temperature
 - Methoxychlor
 - TSS
 - Phosphorus
 - Polychlorinated biphenyls
- 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 Western Crab Orchard Creek Watershed-based Plan

Meeting Schedule

MEETING 1	Introduction of Plan Elements and Watershed Inventory	November, 2020
MEETING 2	Best Management Practices and Remaining Plan Elements	January, 2021
MEETING 3	Prioritization of Best Management Practices	March, 2021
MEETING 4	Draft Plan Review	May 1, 2021
	Final Draft DUE	June 30, 2021

Questions/Comments

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