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Watershed Steering Committee		
#	Org Name/Area Represented	Name
1	Agricultural Community	David Ransbottom
2	Builders Association of Kosciusko & Fulton Counties	Brett Harter
3	Center for Lakes & Streams at Grace College	Nathan Bosch
4	Chapman Lakes Foundation	Peggy Wihebrink
5	County Council - District 4	Jon Garber
6	Kosciusko Area Planning Department	Matt Sandy
7	Kosciusko Chamber of Commerce	Rob Parker
8	Kosciusko County Soil & Water Conservation District	Darci Zolman
9	Kosciusko County Surveyors Office	Mike Kissinger/Jim Moyer
10	Kosciusko Emergency Management Agency	Ed Rock
11	Pierceton A-Large Resident	Andrea Baker
12	Pike Lake Assoc / Warsaw Common Council	Diane Quance
13	Resident At-Large / Center Lake Assn	Max Mock
14	The Watershed Foundation	Lyn Crighton
15	The Watershed Foundation	Chuck Brinkman
16	Town of Winona Lake	Craig Allebach
18	Winona Lake Preservation Assn	Joy Lohse
19	Zimmer Biomet, Inc.	Kirk Swaidner
20	Indiana-American Water	Chris Harrison
21	City of Warsaw - MS4, Storm Water Coordinator	Ryan Workman

Table 1 Steering Committee Members

Watershed Education & Outreach Committee		
#	Org Name	Name
1	KC Recycling Depot	Sarah Fruit
2	Center for Lakes & Streams	Caitlyn Yoder
3	Kosciusko County SWCD	Darci Zolman
4	Clean Waters Partnership	Theresa Sailor
6	The Watershed Foundation	Lyn Crighton
7	Volunteer - Clear Choices Clean Water	Alex Hall
8	The Watershed Foundation	Eileen Oaks
9	Chapman Lakes Foundation	Peggy Wihebrink
10	Pike Lake Assoc / Warsaw Common Council	Diane Quance
11	City of Warsaw	Ryan Workman

Table 2 Education Committee

Technical Committee		
#	Org Name	Name
1	The Watershed Foundation	Sam St.Clair
2	Center for Lakes & Streams	Nathan Bosch
3	Center for Lakes & Streams	Seth Bingham/Stephen Becker
4	Agricultural	David Ransbottom
5	IN American Water	Chris Harrison
6	Kosciusko County Surveyors Office	Jim Moyer
7	Zimmer, Inc.	Kirk Swaidner
8	Kosciusko County SWCD	Andrea Baker
9	Kosciusko Area Planning Department	Matt Sandy
10	City of Warsaw - MS4, Storm Water Coordinator	Ryan Workman
11	City of Warsaw - Utility Department	Brian Davison
12	City of Warsaw - Engineering	James Emans
13	Kosciusko Emergency Management Agency	Ed Rock
14	The Watershed Foundation	Chuck Brinkman
15	The Watershed Foundation	Therersa Sailor
16	The Watershed Foundation	Lyn Crighton
17	IDEM Watershed Specialist	Chelsea Cottingham
18	NRCS Kosciusko County	Chad Shotter

Table 3 Watershed Technical Committee

Ruple - Tippecanoe River Subwatershed													
Waterbody	Public Access Point	Public Access	Public Beach	Ramp	ADA Access	Motors Allowed	Motor Restrictions	Shoreline Fishing	Fee	Fish Advisory	303 (d) list Advisory	Area in Acres (Lakes) Length in Open Miles (Streams)	Maximum Depth (feet)
Tippecanoe River	Paddle Access Chinworth Bridge Trail at Lincoln HWY & N 350 W	Yes	No	No	No	N/A	N/A	Yes	No	Yes	PCBs, Total Mercury, E. Coli	13	uk
Walnut Creek	None Designated	Yes	No	No	No	N/A	N/A	Yes	No	Yes	PCBs	1.4	uk
Center Lake	Central Park	Yes	Yes	Yes	Yes	Yes	10mph	Yes	No	Yes	Phosphorus	120	42
Center Lake	Nye Park	Yes	No	Yes	No	N/A	N/A	Yes	No	Yes			42
Center Lake	Bixler Park	Yes	No	No	No	N/A	N/A	Yes	No	Yes			42
Hidden Lake	No Public Access										None Listed	23	uk
Pike Lake - Deeds Creek Watershed													
Waterbody	Public Access Point	Public Access	Public Beach	Ramp	ADA Access	Motors Allowed	Motor Restrictions	Shoreline Fishing	Fee	Fish Advisory	303 (d) list Advisory 2016	Area in Acres (Lakes) Length in Open Miles (Streams)	Maximum Depth (feet)
Deeds Creek	None Designated									No	E. coli	11	uk
Beyer Brady Ditch	N/A									No	None Listed	4	uk
Hickman Ditch	N/A									No	None Listed	2	uk
McCleary Gochenour Ditch	N/A									No	None Listed	4	uk
Robert Shroyer	N/A									No	None Listed	0.5	uk
Noah Putney	N/A									No	None Listed	1	uk
Big Chapman Lake	Chapman Lake Public Access off of Chapman Lake Drive	Yes	No	Yes	Yes	Yes	None	Yes	No	No	None Listed	413	39
Little Chapman Lake	No Public Access	No	N/A	N/A	N/A	Yes	Yes	N/A	N/A	No	Phosphorus	200	31
Pike Lake	Pike Lake Park & Campground	Yes	Yes	Yes	Yes	Yes	None	Yes	No	Yes	Phosphorus, PCBs, Largemouth Bass 13+"	212	34
Pike Lake	Beyer Park	Yes	No	No	No	N/A	N/A	Yes	No	Yes			34
Pike Lake	Lucerne Park	Yes	No	No	No	Yes	None	Yes	No	Yes			34
Little Pike Lake	Access thru Pike Lake	No	No	No	No	Yes	None	N/A	No	No	Phosphorus	42	9
McCarter Ditch - Deeds Creek													
Waterbody	Public Access Point	Public Access	Public Beach	Ramp	ADA Access	Motors Allowed	Motor Restrictions	Shoreline Fishing	Fee	Fish Advisory	303 (d) list Advisory	Area in Acres (Lakes) Length in Open Miles (Streams)	Maximum Depth (feet)
Deeds Creek	No Public Access									No	E.Coli	11	uk
Van Curen Ditch	No Public Access									No	E.Coli	9.4	uk
Guy Ditch	No Public Access									No	E. coli	2.5	uk

Table 4 Walnut Creek - Tippecanoe River Watershed Streams & Lakes Table A

Winona Lake - Eagle Creek Subwatershed													
Waterbody	Public Access Point	Public Access	Public Beach	Ramp	ADA Access	Motors Allowed	Motor Restrictions	Shoreline Fishing	Fee	Fish Advisory	303 (d) list Advisory	Area in Acres (Lakes) Length in Open Miles (Streams)	Maximum Depth (feet)
Wyland Ditch	N/A										None Listed	19	uk
Keefer - Evans Ditch	N/A										None Listed	6	uk
Martin Peterson Ditch	N/A										None Listed	15	uk
Winona Lake	Kiwanis Park Warsaw	Yes	No	Yes	Yes	Yes	None	Yes	No	Yes	PCBs, Common Carp 26+", White Bass 16+"	571	79
Winona Lake	Winona Lakes Limitless Park	Yes	Yes	Yes	Yes	Yes	None	Yes	No	Yes			79
Winona Lake	Kosciusko County Fairgrounds	Yes	No	Yes	No	Yes	None	Yes	Yes	Yes			79
Laspew Lake	No Public Access										None Listed	8.4	uk
Tennant Lake											None Listed	8.8	8
Sellers Lake											None Listed	26.6	21
Sherburn Lake											None Listed	14	uk
McPherson Lake											None Listed	6.7	uk
Stevens Lake											None Listed	7.6	uk
Reed Lake											None Listed	4.1	4
Wyland Lake											None Listed	9.1	38
Sheely Lake											None Listed	14.4	uk
Lake John											None Listed	23	uk
Eagle Creek - Walnut Creek Subwatershed													
Waterbody	Public Access Point	Public Access	Public Beach	Ramp	ADA Access	Motors Allowed	Motor Restrictions	Shoreline Fishing	Fee	Fish Advisory	303 (d) list Advisory	Area in Acres (Lakes) Length in Open Miles (Streams)	Maximum Depth (feet)
Eagle Creek	No Official Public Access Point, paddlers can access at Country Club Road or Logan Street										None Listed	1.5	uk
Walnut Creek	No Public Access										None Listed	27	uk
Schultz Lake	No Public Access										None Listed	7.2	uk
Tibbitts Lake											None Listed	9.4	uk
Carr Lake	East on CR 400S at SR 15 then south on Kinsey Rd. S, 1.1 mi	Yes	No	Yes	Yes	Yes	None	Yes	No	No	None Listed	80.1	35
Price Lake	No Public Access										None Listed	5.4	uk
Fish Lake											None Listed	17.3	uk
Muskellunge Lake											None Listed	31	21
Goose Lake											None Listed	27.7	53

Table 5 Walnut Creek - Tippecanoe River Watershed Streams & Lakes Table B

Walnut Creek - Tippecanoe River Watershed NPDES Facilities						
Facility Name	**Description**	**Permit Status**	**Discharge Water Body**	**Outfall Type / Ownership**	**Specific Type**	**Subwatershed**
Biomet Manufacturing Engineering	Private Facility	Effective	Hickman Ditch	Direct Discharge	Non-Contact Cooling	Pike Lake - Deeds Creek
Dalton Corp- Warsaw Manufactoring Facility	Private Facility	Effective	Winona Lake	Warsaw Storm Sewer	Non-Contact Cooling	Winona Lake - Eagle Creek
Mecks Wispering Pines MHP	Public/ Private	Effective	GA Robinson Ditch	Direct Discharge	Wastewater	Ruple-Tippecanoe River
Pierceton Water Department	Municipal or Water District	Effective / Non-Compliant 2017	Tributary to Deeds Creek	Direct Discharge	Water (Filter Flushing)	McCarter Ditch - Deeds Creek
Pierceton WWTP	Municipal or Water District	Effective / Non-Compliant 2013. 2015. 2016, 2017	Deeds Creek	Direct Discharge	Wastewater	McCarter Ditch - Deeds Creek
Suburban Acres MHP	Public/ Private	Effective	Tippecanoe River	Direct Discharge	Wastewater	Ruple-Tippecanoe River
Warsaw #1 WWTP	Municipal or Water District	Effective	Walnut Creek	Warsaw Sanitary Sewer or Combined Sewer Overflow into Walnut Creek	Wastewater	Eagle Creek-Walnut Creek
Warsaw #2 WWTP	Municipal or Water District	Effective	Tippecanoe River	Direct Discharge	Wastewater	Ruple-Tippecanoe River
Warsaw Foundry	Private Facility	Effective	WWTP / Center Lake	Warsaw Sanitary and Storm Sewer	Non-contact Cooling	Ruple-Tippecanoe River
Warsaw Mobile Home Park	Private Facility	Effective / Non-Compliant 2016	John Pyle Ditch	Direct Discharge	Wastewater	Eagle Creek-Walnut Creek
Zimmer Inc Bldg 19	Private Facility	Effective	Walnut Creek	Warsaw Storm Sewer	Non-Contact Cooling	Eagle Creek-Walnut Creek
TTP Inc	Private Facility	Terminated	Deeds Creek	uk	uk	Pike Lake - Deeds Creek
DA-LITE Screen Company	Private Facility	Terminated	RR/Airport Property	Direct Discharge	Non-Contact Cooling	Ruple-Tippecanoe River
Shamrock Mobile Home Park	Public/ Private	Terminated	Pike Lake	Warsaw Sanitary Sewer	Wastewater	Winona Lake - Eagle Creek
Information compiled for the Walnut Creek - Tippecanoe River Watershed Desktop Survey 2017 Non-compliance listed for last 4 years. May not be all-inclusive.						

Table 6 Walnut Creek - Tippecanoe River Watershed Permitted NPDES Facilities

Walnut Creek - Tippecanoe River Watershed Remediation Sites					
Facility Name	**Description**	**Status**	**Address**	**Actions**	**Subwatershed**
BDI Engineering	Private Facility	Effective	4130 Corridor Dr Warsaw	Nitrates - Public Drinking Water	Deeds Creek - Pike Lake
Warsaw WWTP #1	Municipal	Closed	794 W Center St Warsaw	Wastewater / Contamination	Eagle Creek - Walnut Creek
R & B Investors / Wildman Uniform & Linen	Private Facility	Effective	800 S Buffalo St Warsaw	Air Quality Permit	Eagle Creek - Walnut Creek
City Dump	Municipal Facility	Closed	West Center St, between Leiter & Walnut Creek	Legacy Contamination	Eagle Creek - Walnut Creek
Warsaw Manufactured Gas Plant	Private Facility	Effective	502 E. Winona Warsaw	VRP	Eagle Creek - Walnut Creek
Checker 22	Private Facility	Closed	1661 W Lake Street	LUST	Eagle Creek - Walnut Creek
Good Oil BP	Private Facility	Effective	625 S Buffalo Warsaw	LUST, Remediation	Eagle Creek - Walnut Creek
Peerless Cleaners	Private Facility	Effective	2020 E Winona Ave Warsaw	HW Site, VRP Remediation	Pike Lake - Deeds Creek
Warsaw Chemical	Private Facility	Effective	390 Argonne Rd Warsaw	HW Cleanup, Rule 6 No Exposure	Pike Lake - Deeds Creek
BDI Engineering	Private Facility	Effective	1212 N Detroit Warsaw	Drinking Water Typ.	Pike Lake - Deeds Creek
Warsaw Plating Works	Private Facility	uk	1900 E Jefferson St Warsaw	Legacy Contamination	Pike Lake - Deeds Creek
DaLite Screen Company	Private Facility	Effective	3100 N Detroit St Warsaw	Air Permit, Drinking Water (VOCs)	Ruple Ditch - Tippecanoe River
Warsaw Orthopedic / Medtronic	Private Facility	Effective	2500 Silveous Crossing Warsaw	Rule 6 - No Exposure, Air Permit, HW Generator	Ruple Ditch - Tippecanoe River
City of Warsaw WWTP # 2	Municipal	Effective	2056 N 150 W Warsaw	Final Closure Remediation	Ruple Ditch - Tippecanoe River
Atwood Farm	Private Facility	Effective	4811 W CR 100 N Warsaw	Nitrates , E. Coli - Public Drinking Water	Ruple Ditch - Tippecanoe River
R Vision Incorporated / Midwest Rake	Private Facility / Public Drinking	Effective	2666 S Country Club Rd Warsaw	Drinking Water Typ.	Winona Lake - Eagle Creek
Information compiled for the Walnut Creek - Tippecanoe River Watershed Desktop Survey 2017					

Table 7 Walnut Creek - Tippecanoe River Watershed Remediation Sites

Mobile Home / Concentrated Multi-family Communities with Septic Systems			
Facility Name	**Description**	**Status**	**Subwatershed**
Chapman Lake Mobile Home Park / Genes Mobile Home Park	Private Facility	Septic System / Drinking Water Testing	Ruple Ditch - Tippecanoe River
Lozier Camp Area Campground	Private Facility	Septic System	Ruple Ditch - Tippecanoe River
Campground Muskellunge Lake	Private Facility	Septic System	Eagle Creek-Walnut Creek
Campground Carr Lake	Private Facility	Septic System	Eagle Creek-Walnut Creek
Mobile Home Community Carr Lake	Private Facility	Septic System	Eagle Creek-Walnut Creek
Mobile Home Community Sellers Lake	Private Facility	Septic System	Winona Lake-Eagle Creek
Information compiled for the Walnut Creek - Tippecanoe River Watershed Desktop Survey			

Table 8 Mobile Home / Concentrated Multi-family Communities with Community Septic Systems

2016 Watershed Management Plan Water Quality Target Recommendations by the Technical Committee			
Water Quality Parameter	Identified Watershed Target	Source of Target	Background Information
Dissolved Oxygen (DO)	Min: 4.0 mg/L Max: 12.0 mg/L	Indiana Administrative Code (327 IAC-2-1-6)	Dissolved Oxygen as measured in mg/L should fit in the 4-12 mg/L parameter; however, the technical committee advises that DO % saturation is determined using temperature and nutrient factors affecting oxygen supply, thus the saturation percentage of dissolved oxygen is key for understanding the available oxygen for aquatic life. 60% - 105% Dissolved Oxygen Saturation is required for the most diverse biota.
pH	Minimum 6 and maximum 9	Indiana Administrative Code (327 IAC-2-1-6)	USGS states importance to aquatic life: The pH of water determines the solubility (amount that can be dissolved in the water) and biological availability (amount that can be utilized by aquatic life) of chemical constituents such as nutrients (phosphorus, nitrogen, and carbon) and heavy metals (lead, copper, cadmium, etc.). For example, in addition to affecting how much and what form of phosphorus is most abundant in the water, pH also determines whether aquatic life can use it. In the case of heavy metals, the degree to which they are soluble determines their toxicity. Metals tend to be more toxic at lower pH because they are more soluble. (Source: A Citizen's Guide to Understanding and Monitoring Lakes and Streams).
Escherichia coli (E. coli)	Max: 235 CFU/100mL in a single sample	Indiana Administrative Code (327 IAC-2-1-6)	Measurement used to identify potential presence of fecal bacterial that statistically could result in increased human health risks.
Total Suspended Solids (TSS)	25.0 mg/L	US EPA Recommendation for Excellent Fisheries	Total suspended solids (TSS) include all particles suspended in water which will not pass through a filter. Suspended solids are present in all waters both point source and non-point source discharges. As levels of TSS increase, a waterbody begins to lose its ability to support a diversity of aquatic life. TSS will absorb heat from sunlight, which increases water temperature and decreases levels of dissolved oxygen. Photosynthesis decreases, since less light penetrates the water then less oxygen is produced by plants and algae and there is a there further drop in dissolved oxygen. TSS can destroy fish habitat as SS can settle to the bottom, blanket a river bed, and smother eggs of fish and aquatic insects, and suffocate newly-hatched insect larvae. In adult fish TSS can clog gills, reduce growth rates, and lower resistance to disease. Water with TSS of less than 20 mg/L appears clear. Water with TSS between 40 and 80 mg/l tends to appear cloudy, and water with concentrations over 150 mg/l usually appears dirty. (michigan.gov)
Total Phosphorus (TP)	.076 mg/L	US EPA Recommended Target	Phosphorus is a nutrient for plants and is released in decomposing plant life. Along with natural sources such as leaves that fall into a water stream, it can be unnaturally introduced by stormwater that is contaminated with grass clippings or leaves, agricultural fertilizers, manure, and organic wastes in sewage and industrial effluent. The addition of unnatural sources speeds up eutrophication of rivers and lakes and grows unwanted algae including toxic variants. Soil erosion from unvegetated, partially vegetated, or cultivated lands can be a major contributor of phosphorus to streams. Bank erosion during floods also can transport significant phosphorous from the river banks and adjacent land into a stream.
Nitrates (NO3) nitrogen	1.5 mg/L	Dividing line between mesotrophic and eutrophic streams (Dodds, W.K. et al., 1998, Table 1, pg. 1459, and in EPA-822-B-00-002 [PDF], p 27.)	Excess nitrogen (a plant nutrient) can cause overstimulation of growth of aquatic plants and algae, use up dissolved oxygen as they decompose, and block light to deeper waters. Lake and reservoir eutrophication can occur, which produces unsightly scums of algae on the water surface, can occasionally result in fish kills, and can even "kill" a lake by depriving it of oxygen. The respiration efficiency of fish and aquatic invertebrates can occur, leading to a decrease in animal and plant diversity, and affects our use of the water for fishing, swimming, and boating. Although nitrogen is abundant naturally in the environment, it is also introduced through sewage and fertilizers. Chemical fertilizers or animal manure is commonly applied to crops to add nutrients. Heavy rains can generate runoff containing these materials into nearby streams and lakes. Wastewater-treatment facilities that do not specifically remove nitrogen can also lead to excess levels of nitrogen in surface or groundwater. Source: usgs.gov

Table 9 Clean Waters Partnership Water Quality Targets

Sampling Site Location Descriptions

Site #	Waterway	Sampling Site Type	**Influences:** Rural Residential (R), Agricultural (A), Urban (U), Lake (L), Wastewater Plant (WWTP)	Location Description
1	Deeds Creek	Bi-weekly	A	Deeds Creek near E 100 N
2	Heeter Ditch	Bi-weekly	A, L	Heeter Ditch off of 175 N
3	Lones Ditch	Bi-weekly	A, U	Lones Ditch W of SR 15
4	Wyland Ditch	Bi-weekly	A, R, U	Wyland Ditch east of Winona Lake, E of Park Ave, Winona Lake
5	Keefer Evans Ditch	Bi-weekly	A, L, R, U	Keefer Evans Ditch south of Winona Lake, 2002 Eastwood Rd, Winona Lake
6	Martin Peterson Ditch	Bi-weekly	A, R	Martin Peterson south of Winona Lake, 741 E Lakewood Ave, Warsaw
7	Eagle Creek	Bi-weekly	A, L, R, U	Eagle Creek west of Winona Lake, 1109 Country Club Rd, Warsaw
8	Walnut Creek before Eagle Creek	Bi-weekly	A,R,U,	Walnut Creek south of Eagle Creek, 429 West Creek Dr, Warsaw
9	Walnut Creek before Tippecanoe River	Bi-weekly	U, A, R, L	Walnut Creek south of Tippecanoe River, at the intersection of Lake St, Warsaw
10	Tippecanoe River	Bi-weekly	U, A, R, L	Tippecanoe River east of WWTP outfall, east of Fox Farm Road
11	Deeds Creek	High Source	A	Deeds Creek at SR 30 east of Pike Lake
12	Van Curen Ditch	High Source	A	Van Curen Ditch at Old Rd 30
13	Leedy Ditch	High Source	A	Leedy Ditch at 600 E
14	Deeds Creek	High Source	A	Deeds Creek, SR 30 3426 SR 30 E
15	Deeds Creek	High Source	A, R	Pierceton Rd east of 600 E
16	Deeds Creek	High Source	A, WWTP	350 S and 725 E, W of Pierceton WWTP
17	Deeds Creek	High Source	A	8506 E Ryerson Rd, E of Pierceton WWTP
18	Outfall into Kelly Park Pond	Stormwater Outfall	U	Kelly Park, 130 Fawley St (STO-60-010)
19	Outfall into Winona Lake	Stormwater Outfall	U	2400 Winona Ave. (STO-047-039)
20	Outfall into Pike Lake	Stormwater Outfall	U	Warsaw Cemetery, 421 N Maple Street (STO-028-003)

Table 10 Sampling Site Location Descriptions

Summary of Sampling Data at All Sites																	
		E. coli				Nitrates (NO3)				Total Phosphorus				Suspended Solids			
Site #	Waterbody	Average Reading cfu/ 100mL	*Highest Reading cfu/ 100mL	Lowest Reading cfu/ 100mL	% Exceeded 235 cfu/ 100mL	Average Reading mg/L	Highest Reading mg/L	Lowest Reading mg/L	% Exceeded CWP Target 1.5 mg/L	Average Reading mg/L	Highest Reading mg/L	Lowest Reading mg/L	% Exceeded CWP Target .076 mg/L	Average Reading mg/L	Highest Reading mg/L	Lowest Reading mg/L	% Exceeded CWP Target 25 mg/L
1	Deeds Creek	650	>2419	36	62%	3.21	9.38	0.36	87%	0.118	0.606	0.015	46%	23	254	0	22%
2	Heeter Ditch	319	>2419	1	30%	0.67	2.40	0.09	9%	0.044	0.111	0.012	8%	11	48	0	7%
3	Lones Ditch	38	727	1	6%	1.23	3.37	0.00	39%	0.039	0.154	0.007	4%	8	32	0	2%
4	Wyland Ditch	354	>2419	28	42%	1.95	5.61	0.48	54%	0.072	0.544	0.014	22%	14	292	0	6%
5	Keefer Evans	223	1986	9	26%	0.96	3.86	0.09	24%	0.056	0.376	0.016	11%	11	162	0	4%
6	Peterson Ditch	723	>2419	21	54%	1.86	5.92	0.34	54%	0.090	0.738	0.013	25%	24	337	0	9%
7	Eagle Creek	24	345	0	19%	0.51	1.91	0.00	2%	0.033	0.064	0.014	0%	5	17	0	0%
8	Walnut Creek Before Eagle Creek	298	>2419	1	33%	1.62	4.97	0.09	44%	0.085	0.201	0.018	52%	6	20	0	0%
9	Walnut Creek before Tippecanoe River	172	1732	13	26%	0.78	2.37	0.07	11%	0.069	0.151	0.030	39%	7	33	0	0%
10	Tippecanoe River East of Fox Farm	115	1119	13	11%	0.64	1.55	0.09	2%	0.032	0.072	0.012	0%	5	16	0	0%
11	Deeds Creek	457	980	106	75%	1.51	1.87	1.34	25%	0.062	0.136	0.032	25%	11	31	1	25%
12	Van Curen Ditch	783	>2419	30	75%	1.35	2.10	0.93	25%	0.070	0.120	0.017	100%	6	6	2	0%
13	Leedy Ditch	1117	>2419	435	100%	2.58	3.25	1.98	100%	0.136	0.189	0.043	75%	17	36	6	25%
14	Deeds Creek	1096	>2419	236	100%	4.51	6.25	2.92	100%	0.050	0.088	0.020	25%	4	7	0	0%
15	Deeds Creek	807	>2419	210	75%	3.60	4.11	3.20	100%	0.170	0.198	0.096	100%	11	27	0	25%
16	Deeds Creek	1416	>2419	225	75%	5.71	7.66	3.93	100%	0.540	0.906	0.289	100%	10	26	2	0%
17	Deeds Creek	1864	>2419	200	75%	3.47	5.29	1.29	75%	0.140	0.167	0.115	100%	30	50	7	50%
18	Outfall into Kelly Park Pond	922	>2419	816	80%	0.50	1.10	0.12	100%	0.170	0.238	0.129	100%	30	75	12	33%
19	Outfall into Winona Lake	130	>2419	23	33%	0.30	0.74	0.00	83%	0.160	0.356	0.049	100%	237	679	3	50%
20	Outfall into Pike Lake	739	>2419	179	0.4	0.65	1.12	0.26	100%	0.430	0.712	0.091	100%	223	788	4	33%

* When the highest reading is >2419, the number that was calculated to be the average will be underreported. In some instances it could be significant. The percentage exceeding the limit should give an indication if E. coli is a prevalent problem at that site.

Table 11 Summary of Sampling Data at All Sites

Hoosier Riverwatch & Citizens Qualitative Habitat Evaluation Index Data														
Site #	Site Description	Sample #	2016 Date	Pollution Tollerance Index Rating (PTI) Score (23+ Excellent, 10 or less Poor)		Presence of Group 1 - Pollution Intollerant Organisms	2016 Date	Qualitative Habitat Evaluation Index (CQHEI)	Waterway Substrate (0-25)	Fish Cover Present (2-18)	Stream Shape and Human Alteration (0-20)	Stream Forests, Wetlands, Riparian, Erosion (0-19)	Water Depth & Velocity (0-15)	Riffles Runs (0-15)
1	Deeds Creek	A	7/6	20	Good	Yes	7/6	52.5	15	10	12	9.5	6	0
1	Deeds Creek	B	7/6	15	Fair	No								
2	Heeter Ditch	A	7/14	22	Good	Yes	7/6	29.5	0	8	9	4.5	8	0
2	Heeter Ditch	B	7/14	20	Good	Yes								
3	Lones Ditch	A	7/14	10	Poor	No	7/6	51.5	5	16	9	13.5	8	0
3	Lones Ditch	B	7/14	10	Poor	No								
4	Wyland Ditch	A	7/6	21	Good	Yes	7/6	55	16	8	9	3	6	13
4	Wyland Ditch	B	7/6	19	Good	Yes								
5	Keefer-Evans Ditch	A	7/6	26	Excellent	Yes	7/6	54.5	5	10	18	13.5	8	0
5	Keefer-Evans Ditch	B	7/6	20	Good	Yes								
6	Martin Peterson Ditch	A	7/6	4	Poor	No	7/6	48.5	15	10	9	8.5	6	0
6	Martin Peterson Ditch	B	7/6	4	Poor	No								
7	Eagle Creek	A	7/6	15	Fair	Yes	7/6	44.5	15	6	6	9.5	8	0
7	Eagle Creek	B	7/6	9	Poor	No								
8	Walnut Creek before Eagle Creek	A	7/14	11	Fair	Yes	7/6	66.5	16	10	15	10.5	9	6
8	Walnut Creek before Eagle Creek	B	7/14	9	Poor	No								
9	Walnut Creek before Tippy River	A	7/14	21	Good	Yes	7/6	57.5	10	12	12	13.5	10	0
9	Walnut Creek before Tippy River	B	7/14	20	Good	Yes								
10	Tippy River at Fox Farm Rd	A	7/14	25	Excellent	Yes	7/6	63.5	16	14	9	16.5	8	0
10	Tippy River at Fox Farm Rd	B	7/14	21	Good	Yes								
Denotes an area that received .18-.72 inches of rain in the 24 hours prior to monitoring. Results may not be typical. Macroinvertabrates that may normally have been found at that site could have been flushed by the heavy rain event.														

Table 12 Hoosier Riverwatch & CQHEI Data – 2016

Indiana Clean Lakes Program - Trends for Carlson Trophic Indices for Major Lakes										
Waterbody	2011	2012	2013	2014	2015	2016	2017	2018	Trend - Stable (S), Fluctuating (F), Degrading (D), Unknown (U)	Trophic Status - Oligotrophic (O), Mesotrophic (M), Eutrophic (E), Hypereutrophic (H)
Pike Lake			68	60	65				U	E-H
Winona Lake		54	66	51	60	52	56	59	S	E
Center Lake	51	49	50	45	57	42	44	41	S	M
Big Chapman Lake	48	46	48	46	48	46	53		S	M
Little Chapman Lake	58	59	60	60	60	57	62		S	E
Yellow shaded areas have no data for that year.										

Table 13 TSI Values for Larger Lakes in the Walnut Creek - Tippecanoe Watershed from the Indiana Clean Lakes Program (IDEM and Indiana University 2011-2018)

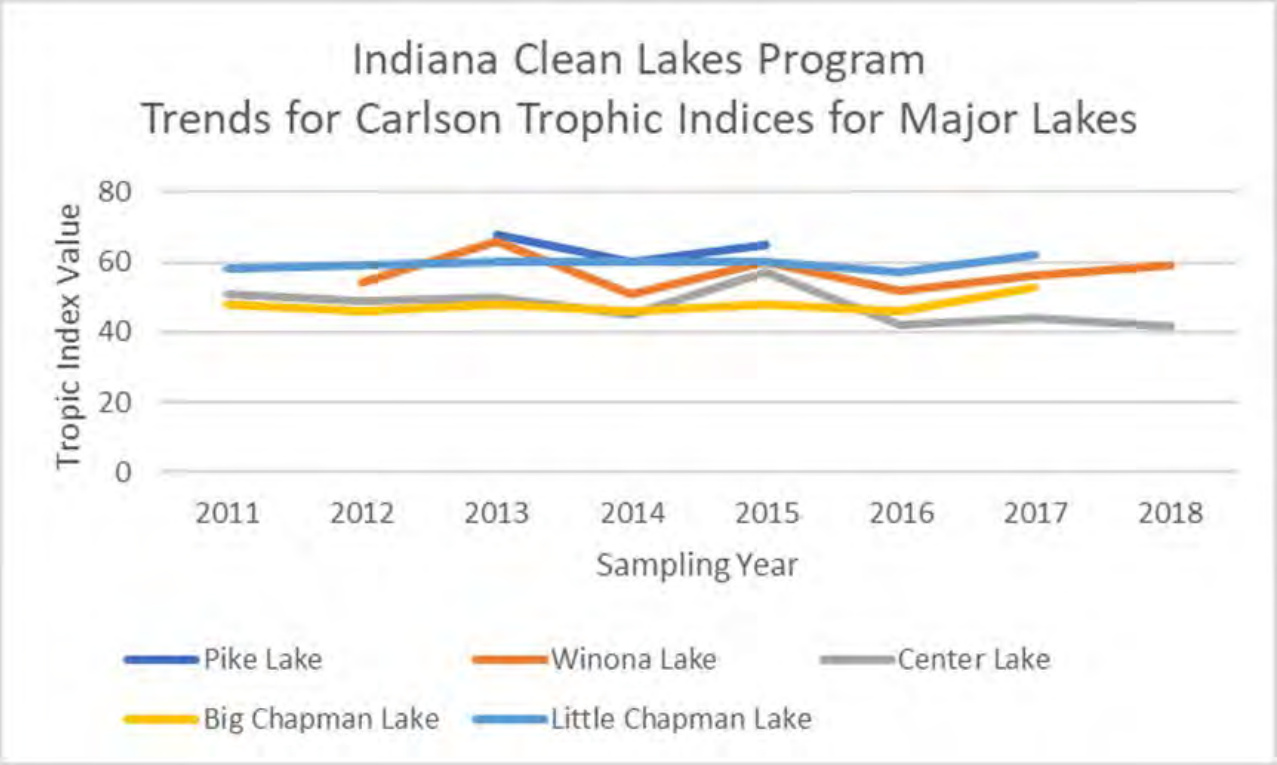


Table 14 Trends for Carlson Trophic Indices for Major Lakes in the Watershed - Indiana Lakes Program

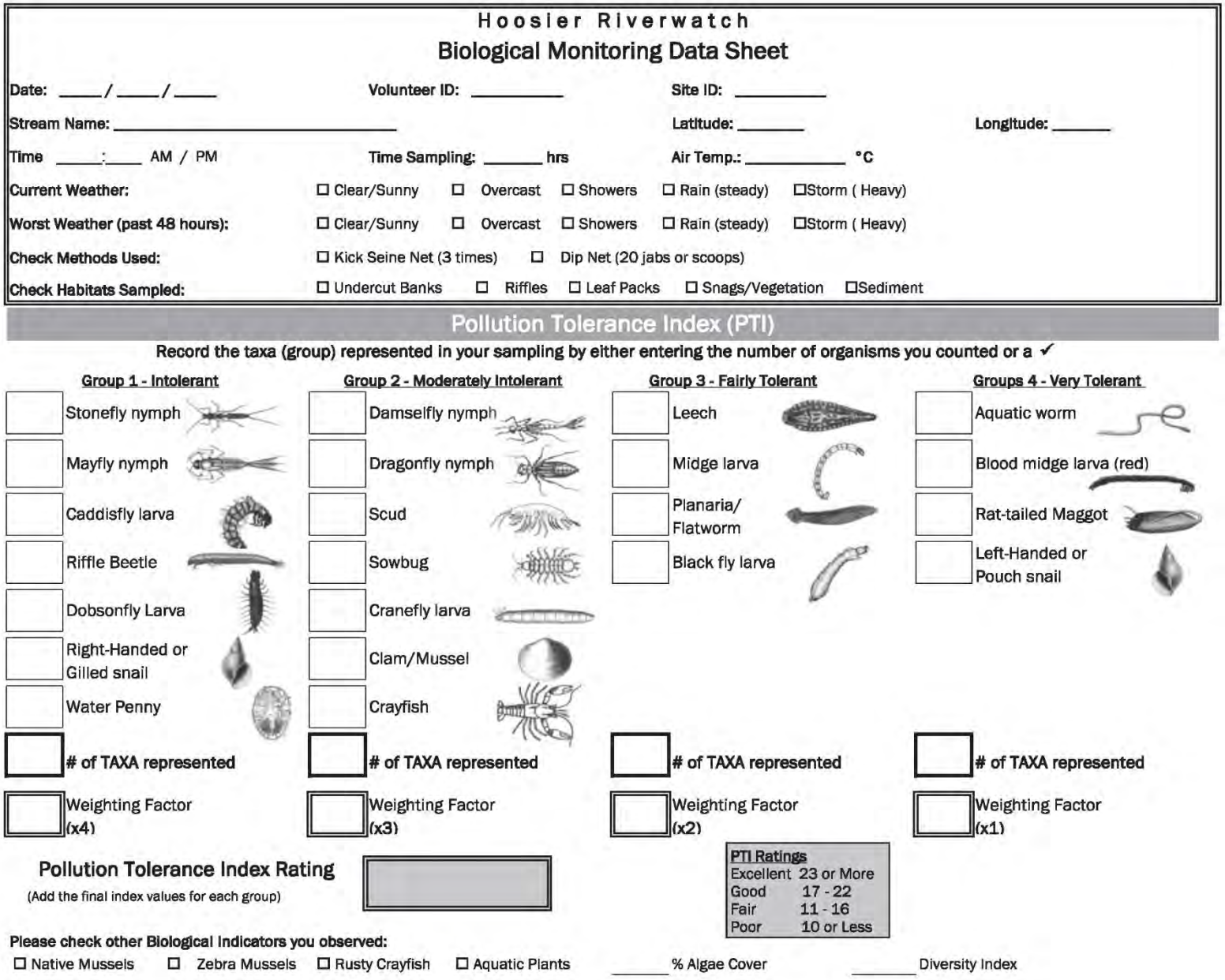
Snapshot Water Monitoring Day Results - September 27, 2017									
Field Survey Done for each site prior to sampling to check channel silting									
Site #	Temp (˚F)	Turbidity (cm)	Dissolved Oxygen (mg/L)	Nitrite (mg/L)	Nitrate (ml/L)	Ortho-phosphate (mg/L)	pH	E.coli (CFU/ 100mL	Silting of Channel (inches)
DC03	60	60	5	0	0	0	7	0	2
DC04	60	16	2.5	0	0.15	0.8	7.5	900	24
DC07A	68	60	4	0.15	2	0	6.5	0	uk
DC08	70	24	8	0	0.5	0.2	7	350	0
DC 15	no flow								uk
DC 16	70	56	10	0	0.5	0.1	8.5	0	uk
DC 18	68	60	6	0	0.5	0.1	7.5	600	5+
DC24	68	60	8	0.5	0.5	0.1	8	200	0
DC25	67	60	6	0	0.5	0.2	8	250	uk
DC30	68	60	5	0	0.5	0.1	7.5	0	0
DC30A	66	60	4	0	0.5	0.1	7.5	300	4
DC33	62	60	7	0.5	0	0.1	8	100	uk
DC35	72	47.2	7	0	0	0	7.5	0	8
EC02	71	59	4	0	0	0.3	7.5	0	6
EC07	68	60	7	0	0.5	0.3	7.5	100	0
EC08	71	60	6	0	0.5	0.6	7	300	2
EC12	69	65	5	0	2	0.4	7	450	uk
EC20	64	65	5.5	0	0.1	0.2	7.5	800	uk
EC4A	71	120	5	0	0.5	0.4	6.5	50	uk
MC03	67	60	5.5	0	0.5	0.2	8.5	200	2
MC04A	65	60	11	0.15	10	0.3	8	200	uk
MC14	Did not get sampled in 2017								0
MC17	Did not get sampled in 2017								6
MC22	62	27.5 cm	4.5	0	0	0.3	8	750	6
RD05	71	59 cm	6	0	0	0	7	0	0
RD10	72	60 cm	11	0	0	0	7	0	0
RD13	65	15 cm	3	0	0	0.3	7.5	0	3
RD15	no flow								N/A
WL21	60	8 cm	5	0	0	0.4	7	300	uk
WL32	65	60 cm	8	0	0	0	7.5	250	uk
WL33	64	60 cm	6	0	0	0.05	7	300	0
WL35	63	65 cm	8.5	0	0.5	0.1	7	100	12
WL46A	58	32 cm	5	0	2	0.2	7.5	500	uk
T01	76.5	60	7	0	0	0	7.5	0	uk
Key: Ruple Ditch - RD, McCarter Ditch - MC, Winona Lake - WL, Deeds Creek - DC, Eagle Creek - EC									

Table 15 Snapshot Monitoring Day Results 2017

	Criteria to Meet Objectives	Carr Lake	Chapman Lakes	Center Lake	Pik Lakes	Winona Lake	Cherry Creek	Deeds Creek	Eagle Creek	Heeter Ditch	Keefer- Evans	Lones Ditch	Peterson Ditch	Tippecanoe River (Fox Farm Rd)	Walnut Creek b/f Eagle	Walnut Creek b/f Tippy River	Deeds Creek Ditch	Private Lakes	Initials
Objective: Reduce Sediment, Nutrients, & Pollution in Local Waterways	Total Suspended Solids (TSS)	1	1	3	3	3	2	3	1	2	2	1	3	1	1	1	2		NB
	Phosphorus (P)	2	1	2	2	2	2	3	1	1	1	1	3	1	2	2	2		NB
	Nitrates (NO3)	1	1	1	3	2	3	3	1	1	1	2	3	1	3	1	3		NB
	Septic Systems (Failing / Unsuitable Soils)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2.6		JM
	Urban Stormwater Quality	1	2	3	3	3	3	1	2	1	1	2.5	1	1.5	3	3	1		RW
	Industry- NPDES	1	1	2	2	3	1	2	3	1	1	1	1	3	3	3	2	1	KS
	Urban Impervious Surface	1	2	3	3	3	3	1	2	1	1	2.5	1	1.5	3	3	1		RW
	Agriculture - Row Crop Tillage	1	3	1	3	3	2	3	1	2	2	1	3	2	3	2	3		SS
	Agriculture (Manure) Unfenced Livestock /Land Application	3	1	1	2	2	1	2	1	2	1	1	2	1	2	1	2		1
Drains	Regulated Drains Assessment	1	1	1	3	1	2	3	1	3	1	3	3	1	1	1	3		JM
Objective: Protect & Improve Habitat	Endangered Species, Irreplaceability Values: Fish, Crayfish, Mussels	1	3	2	1	1	1	1	1	1	1	1	1	3	1	1	1	1	AB
	Invasive Species	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		AB
	Habitat CQEHI	2	2	2	2	2	1	1	2	3	1	1	2	1	1	1	2		NB
	Macroinvertebrates PTI Index	2	2	2	2	2	1	2	2	1	1	3	3	1	3	1	2		NB
Objective: Promote Local Lakes Culture (value of water)	Importance to Anglers	3	3	3	3	3	1	1	2	1	1	2	1	2	1	2	1		AB
	Economic Importance	1	2	2	2	3	1	1	1	1	1	1	1	2	1	1	1		NB
	Recreational Use (boating, swimming, etc…)	2	3	2	2	3	1	1	1	1	1	1	1	2	1	1	1		NB
Overall Ability to Complete Objective	Immediacy of Threats	7	7	6	10	9	7	10	8	5	6	5	8	5	8	8	10	4	Everyone
	Permanency of Threats	6	7	8	10	9	7	10	7	6	7	5	8	6	7	8	10	4	
	political will based on results and stakeholder desires and attitudes	2	5	4	4	4	4	5	2	4	4	2	5	2	2	2	4	2	
	Potential Landowner willingness to implement	4	2	2	3	4	3	4	2	3	4	2	4	2	3	2	3	3	
	Potential for securing funding	3	3	3	4	3	3	3	2	3	3	2	3	4	3	2	3	1	
Totals	Total Score	49	56	57	71	69	53	64	47	47	45	44	61	47	56	50	62.6	16	
	Ranking																		

AB - Andrea Baker, NB - Nate Bosch, KS - Kirk Swaidner, SS - Sam St. Clair, RW - Ryan Workman 5/3/2017

Table 16 Committee Priority Selection Worksheet



Hoosier Riverwatch

Biological Monitoring Data Sheet

Date: ____/____/____ Volunteer ID: _____ Site ID: _____

Stream Name: _____ Latitude: _____ Longitude: _____

Time ____:____ AM / PM Time Sampling: _____ hrs Air Temp.: _____ °C

Current Weather: ☐ Clear/Sunny ☐ Overcast ☐ Showers ☐ Rain (steady) ☐Storm (Heavy)

Worst Weather (past 48 hours): ☐ Clear/Sunny ☐ Overcast ☐ Showers ☐ Rain (steady) ☐Storm (Heavy)

Check Methods Used: ☐ Kick Seine Net (3 times) ☐ Dip Net (20 jabs or scoops)

Check Habitats Sampled: ☐ Undercut Banks ☐ Riffles ☐ Leaf Packs ☐ Snags/Vegetation ☐Sediment

Pollution Tolerance Index (PTI)

Record the taxa (group) represented in your sampling by either entering the number of organisms you counted or a ✓

Group 1 - Intolerant	Group 2 - Moderately Intolerant	Group 3 - Fairly Tolerant	Groups 4 - Very Tolerant
Stonefly nymph	Damselfly nymph	Leech	Aquatic worm
Mayfly nymph	Dragonfly nymph	Midge larva	Blood midge larva (red)
Caddisfly larva	Scud	Planaria/ Flatworm	Rat-tailed Maggot
Riffle Beetle	Sowbug	Black fly larva	Left-Handed or Pouch snail
Dobsonfly Larva	Cranefly larva		
Right-Handed or Gilled snail	Clam/Mussel		
Water Penny	Crayfish		
# of TAXA represented	# of TAXA represented	# of TAXA represented	# of TAXA represented
Weighting Factor (x4)	Weighting Factor (x3)	Weighting Factor (x2)	Weighting Factor (x1)

Pollution Tolerance Index Rating

(Add the final index values for each group)

PTI Ratings

Excellent	23 or More
Good	17 - 22
Fair	11 - 16
Poor	10 or Less

Please check other Biological Indicators you observed:

☐ Native Mussels ☐ Zebra Mussels ☐ Rusty Crayfish ☐ Aquatic Plants _____ % Algae Cover _____ Diversity Index

Figure 1 Volunteer Stream Monitoring Training Manual - Biological Monitoring Data Sheet (IDEM, 2017)

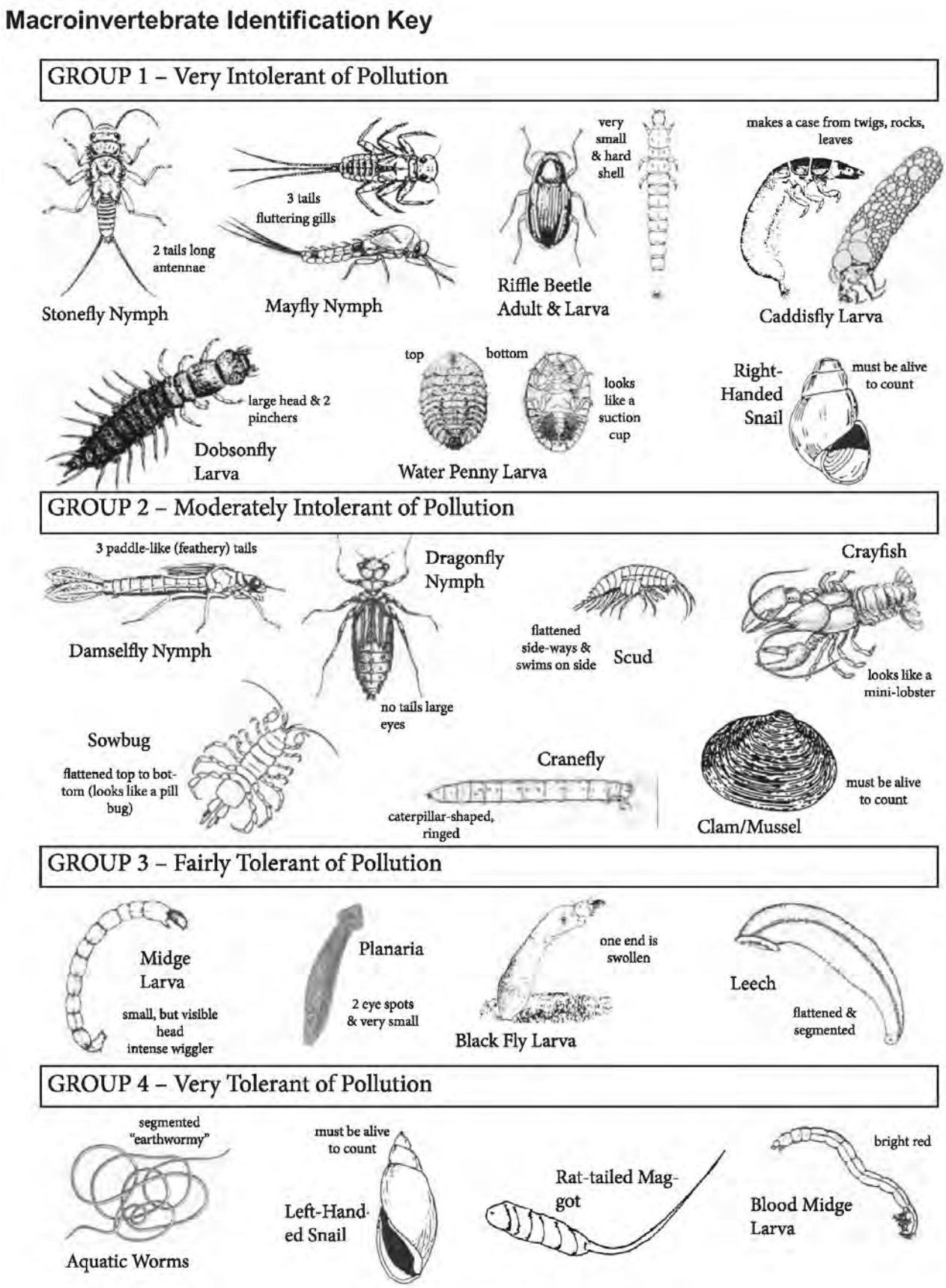


Figure 2 Volunteer Stream Monitoring Training Manual - Macroinvertebrate Identification Key Juvenile (IDEM, 2017)

Macroinvertebrate Adults Key

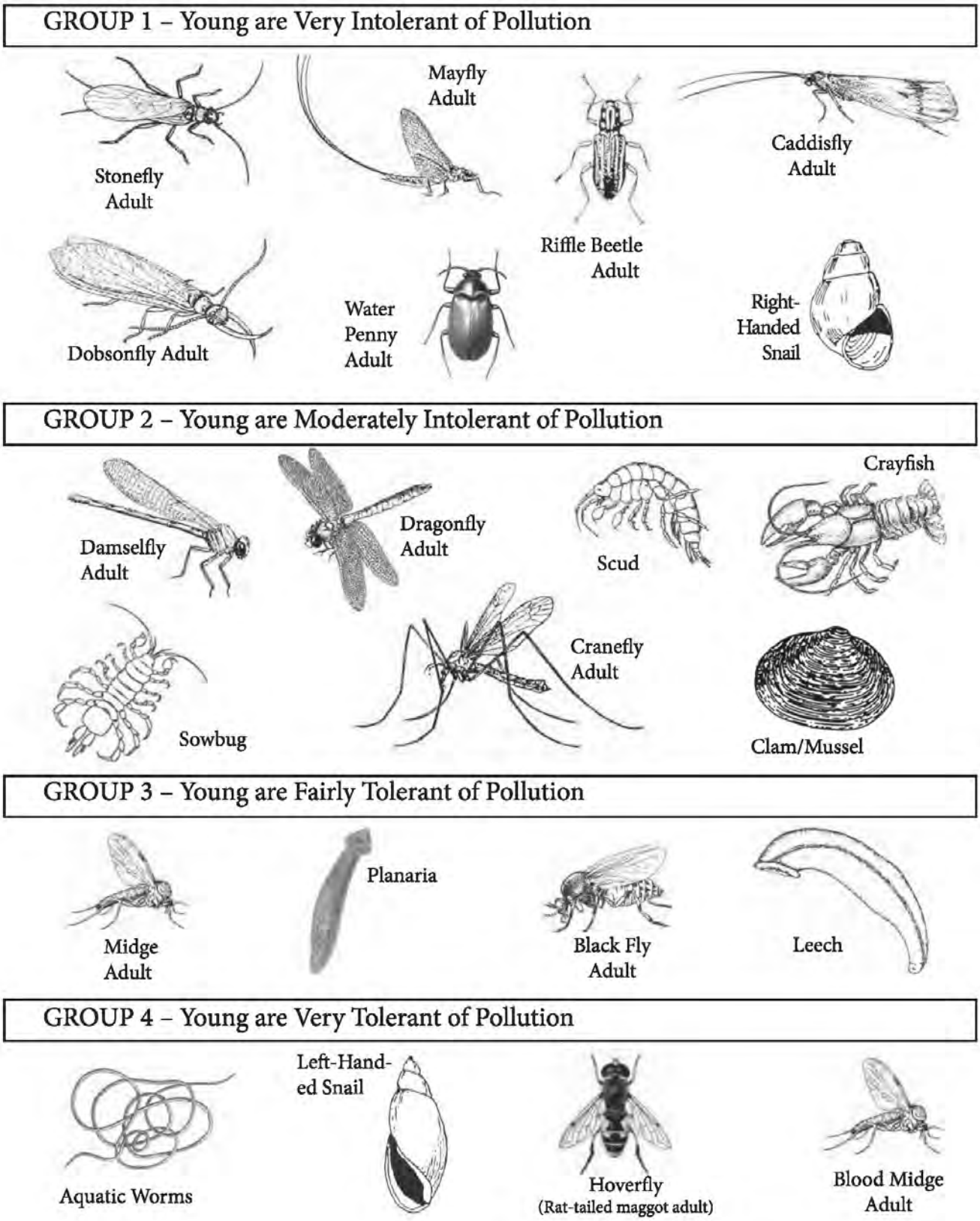


Figure 3 Volunteer Stream Monitoring Training Manual - Macroinvertebrate Identification Key Adult (IDEM, 2017)

Citizens Qualitative Habitat Evaluation Index (CQHEI)

Date: __/__/__ Volunteer ID: _____ Site ID: _____

Stream Name: _____ CQHEI Total

I. SUBSTRATE (bottom type) Score:

a) Size

- ☐ Mostly Large (Fist Size or Bigger) — 14 pt
- ☐ Mostly Small (Smaller Than Fingernail, but Coarse, or Bedrock) — 6 pt
- ☐ Mostly Medium (Smaller than Fist, larger than Fingernail) — 10 pt
- ☐ Mostly Very Fine (Not Coarse, Sometimes Greasy or Mucky) — 0 pt

b) "Smothering"

Are Fist Size and Larger Pieces Smothered By Sands/Silts?

- ☐ No — 5 pt
- ☐ Yes — 0 pt

Symptoms: Hard to move pieces, often black on bottom.

c) "Silting"

Are Silts and Clays Distributed Throughout Stream?

- ☐ No — 5 pt
- ☐ Yes — 0 pt

Symptoms: Light kicking results in substantial clouding for more than a minute.

II. FISH COVER (hiding places) - Add 2 Points For Each One Present Score:

- ☐ Underwater Tree Roots (Large) — 2 pt
- ☐ Shrubs/Small Trees Hang Over the Bank — 2 pt
- ☐ Downed Trees, Logs, or Branches — 2 pt
- ☐ Water Plants — 2 pt
- ☐ Undercut Banks — 2 pt
- ☐ Underwater Tree Rootlets (Small) — 2 pt
- ☐ Backwaters, Oxbows or Side Channels — 2 pt
- ☐ Shallow, Slow Areas for Small Fish — 2 pt
- ☐ Deep Areas (Chest Deep) — 2 pt
- ☐ Boulders — 2 pt

III. STREAM SHAPE and HUMAN ALTERATIONS Score:

a) "Curviness" or "Sinuousity" of Channel

- ☐ 2 or More Good Bends — 8 pt
- ☐ Mostly Straight Some Wiggle" — 3 pt
- ☐ 1 or 2 Good Bends — 6 pt
- ☐ Very Straight — 0 pt

b) How Natural Is The Site?

- ☐ Mostly Natural — 12 pt
- ☐ Many Man-Made Changes, but Some Natural Conditions left (e.g., trees, meanders) — 6 pt
- ☐ Few Minor Man-Made Changes (e.g., a bridge) — 9 pt
- ☐ Heavy, Man-made Changes (e.g., leveed or channelized) — 0 pt

IV. STREAM FORESTS & WETLANDS (riparian area) & EROSION Score:

a) Riparian Width Mostly:

- ☐ Wide (Can't throw a rock through it) — 8 pt
- ☐ Narrow (can throw a rock through it) — 5 pt
- ☐ None — 0 pt

b) Land Use - Mostly:

- ☐ Forest/Wetland — 5 pt
- ☐ Conservation Tillage — 2 pt
- ☐ Shrubs — 4 pt
- ☐ Suburban — 1 pt
- ☐ Overgrown Fields — 3 pt
- ☐ Row Crop — 1 pt
- ☐ Fenced Pasture — 2 pt
- ☐ Open Pasture — 0 pt
- ☐ Park (Grass) — 2 pt
- ☐ Urban/ Industrial — 0 pt

c) Bank Erosion

- ☐ Stable Hard or Well-Vegetated Banks — 4 pt
- ☐ Combination of Stable and Eroding Banks — 2 pt
- ☐ Raw, Collapsing Banks — 0 pt

d) Stream Shading

- ☐ Mostly — 3 pt
- ☐ Partly — 2 pt
- ☐ None — 0 pt

V. DEPTH & VELOCITY Score:

a) Deepest Pool is At Least:

- ☐ Chest Deep — 8 pt
- ☐ Knee Deep — 4 pt
- ☐ Waist Deep — 6 pt
- ☐ Do Not Exist — 0 pt

b) Check ALL The Flow Types That You See (Add Points):

- ☐ Very Fast: Hard to Stand in Current — 2 pt
- ☐ Moderate: Slowly Takes Object Downstream — 1 pt
- ☐ None — 0 pt
- ☐ Fast: Quickly Takes Object Downstream — 3 pt
- ☐ Slow: Flow Nearly Absent — 1 pt

VI. RIFFLES/RUNS (areas where current is fast/turbulent, surface may be broken) Score:

a) Riffles/Runs Are:

- ☐ Knee Deep or Deeper and Fast — 8 pt
- ☐ Ankle Deep or Less and Slow — 4 pt
- ☐ Ankle/Calf Deep and Fast — 6 pt
- ☐ Do Not Exist — 0 pt

b) Riffle/Run Substrates Are:

- ☐ Fist Size or Larger — 7 pt
- ☐ Smaller Than Your Fingernails or Do Not Exist — 0 pt
- ☐ Smaller Than Fist Size, but Larger Than Fingernail — 4 pt

Figure 4 Volunteer Stream Monitoring Training Manual – Citizens Qualitative Habitat Evaluation Index (CQHEI) (IDEM, 2017)

Indiana County Endangered, Threatened and Rare Species List

County: Kosciusko

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Epioblasma obliquata perobliqua	White catspaw	LE	SE	G1T1	SX
Epioblasma torulosa rangiana	Northern Riffleshell	LE	SE	G2T2	S1
Lampsilis fasciola	Wavyrayed Lampmussel		SSC	G5	S3
Lampsilis ovata	Pocketbook			G5	S2
Ligumia recta	Black Sandshell			G4G5	S2
Obovaria subrotunda	Round Hickorynut	C	SE	G4	S1
Pleurobema clava	Clubshell	LE	SE	G1G2	S1
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Quadrula cylindrica cylindrica	Rabbitsfoot	LT	SE	G3G4T3	S1
Simpsonaias ambigua	Salamander Mussel	C	SSC	G3	S2
Toxolasma lividus	Purple Lilliput	C	SSC	G3Q	S2
Villosa fabalis	Rayed Bean	LE	SE	G2	S1
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Lepidoptera (Butterflies & Moths)					
Capis curvata	A Noctuid Moth		ST	G5	S2S3
Catocala praeclara	Praeclara Underwing		SR	G5	S2S3
Chortodes inquinata	Tufted Sedge Moth		ST	GNR	S1S2
Dasychira cinnamomea	A Moth		SR	G4	S1
Euphydryas phaeton	Baltimore		SR	G5	S2
Euphyes bimacula	Two-spotted Skipper		ST	G4	S2
Exyra rolandiana	Pitcher Window Moth		SE	G4	S1S2
Hemileuca sp. 3	Midwestern Fen Buckmoth		ST	G5T3T4	S1?
Hesperia leonardus	Leonard's Skipper		SR	G5	S2
Iodopepla u-album	A Noctuid Moth		SR	G5	S2
Leucania multilinea			SR	G5	S1S2
Lycaena helloides	Purplish Copper		SR	G5	S2S4
Lytrosis permagnaria	A Lytrosis Moth		ST	G3G4	S2
Macrochilo absorptalis	A Moth		SR	G4G5	S2S3
Papaipema appassionata	The Pitcher Plant Borer Moth		SE	G4	S1
Papaipema speciosissima	The Royal Fern Borer Moth		ST	G4	S2S3
Pieris oleracea	Eastern Veined White		SE	G5	S1
Fish					
Acipenser fulvescens	Lake Sturgeon		SE	G3G4	S1
Coregonus artedi	Cisco		SSC	G5	S2
Percina evides	Gilt Darter		SE	G4	S1
Amphibian					
Acris blanchardi	Northern Cricket Frog		SSC	G5	S4
Ambystoma laterale	Blue-spotted Salamander		SSC	G5	S2
Hemidactylium scutatum	Four-toed Salamander		SSC	G5	S2

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Figure 5 Indiana County Endangered, Threatened, and Rare Species List Page 1 of 4

Indiana County Endangered, Threatened and Rare Species List

County: Kosciusko

Species Name	Common Name	FED	STATE	GRANK	SRANK
Lithobates pipiens	Northern Leopard Frog		SSC	G5	S2
Necturus maculosus	Common mudpuppy		SSC	G5	S2
Reptile					
Clemmys guttata	Spotted Turtle	C	SE	G5	S2
Clonophis kirtlandii	Kirtland's Snake	C	SE	G2	S2
Emydoidea blandingii	Blanding's Turtle	C	SE	G4	S2
Nerodia erythrogaster neglecta	Copperbelly Water Snake	PS:LT	SE	G5T3	S2
Sistrurus catenatus catenatus	Eastern Massasauga	LT	SE	G3	S2
Bird					
Botaurus lentiginosus	American Bittern		SE	G5	S2B
Certhia americana	Brown Creeper			G5	S2B
Chlidonias niger	Black Tern		SE	G4G5	S1B
Circus hudsonius	Northern Harrier		SE	G5	S2
Cistothorus palustris	Marsh Wren		SE	G5	S3B
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Empidonax alnorum	Alder Flycatcher			G5	S2B
Falco peregrinus	Peregrine Falcon		SSC	G4	S2B
Grus canadensis	Sandhill Crane		SSC	G5	S2B,S1N
Haliaeetus leucocephalus	Bald Eagle		SSC	G5	S2
Ixobrychus exilis	Least Bittern		SE	G5	S3B
Mniotilta varia	Black-and-white Warbler		SSC	G5	S1S2B
Nycticorax nycticorax	Black-crowned Night-heron		SE	G5	S1B
Pandion haliaetus	Osprey		SE	G5	S1B
Rallus elegans	King Rail		SE	G4	S1B
Rallus limicola	Virginia Rail		SE	G5	S3B
Setophaga cerulea	Cerulean Warbler		SE	G4	S3B
Vermivora chrysoptera	Golden-winged Warbler	C	SE	G4	S1B
Mammal					
Condylura cristata	Star-nosed Mole		SSC	G5	S2?
Mustela nivalis	Least Weasel		SSC	G5	S2?
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Actaea rubra	Red Baneberry		ST	G5	S1
Andromeda glaucophylla	Bog Rosemary		SR	G5T5	S2
Arethusa bulbosa	Swamp-pink		SX	G5	SX
Bidens beckii	Beck Water-marigold		ST	G5	S1
Carex aurea	Golden-fruited Sedge		SR	G5	S2
Carex bebbii	Bebb's Sedge		ST	G5	S2
Carex chordorrhiza	Creeping Sedge		SE	G5	S1

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Figure 6 Indiana County Endangered, Threatened, and Rare Species List Page 2 of 4

Indiana County Endangered, Threatened and Rare Species List

County: Kosciusko

Species Name	Common Name	FED	STATE	GRANK	SRANK
Carex disperma	Softleaf Sedge		SE	G5	S1
Carex echinata	Little Prickly Sedge		SE	G5	S1
Carex flava	Yellow Sedge		ST	G5	S2
Carex pseudocyperus	Cyperus-like Sedge		SE	G5	S1
Cornus amomum ssp. amomum	Silky Dogwood		SE	G5T5	S1
Cornus canadensis	Bunchberry		SE	G5	S1
Cypripedium calceolus var. parviflorum	Small Yellow Lady's-slipper		SR	G5	S2
Cypripedium candidum	Small White Lady's-slipper		WL	G4	S2
Dichanthelium boreale	Northern Witchgrass		SR	G5	S2
Drosera intermedia	Spoon-leaved Sundew		SR	G5	S2
Eleocharis geniculata	Capitate Spike-rush		ST	G5	S2
Eriophorum angustifolium	Narrow-leaved Cotton-grass		SR	G5	S2
Eriophorum gracile	Slender Cotton-grass		ST	G5	S2
Eriophorum viridicarinatum	Green-keeled Cotton-grass		SR	G5	S2
Geranium robertianum	Herb-robert		ST	G5	S2
Juglans cinerea	Butternut		WL	G4	S3
Lathyrus ochroleucus	Pale Vetchling Peavine		SE	G5	S1
Lemna perpusilla	Minute Duckweed		SX	G5	SX
Lemna valdiviana	Pale Duckweed		SE	G5	S1
Malaxis unifolia	Green Adder's-mouth Orchid		SE	G5	S1
Matteuccia struthiopteris	Ostrich Fern		SR	G5	S2
Myriophyllum verticillatum	Whorled Water-milfoil		SR	G5	S2
Panax trifolius	Dwarf Ginseng		WL	G5	S2
Platanthera psycodes	Small Purple-fringe Orchis		SR	G5	S2
Potamogeton epihydrus	Nuttall Pondweed		SE	G5	S1
Potamogeton friesii	Fries' Pondweed		ST	G5	S1
Potamogeton oakesianus	Oakes Pondweed		SE	G5	S1
Potamogeton praelongus	White-stem Pondweed		ST	G5	S1
Potamogeton pusillus	Slender Pondweed		WL	G5	S2
Potamogeton richardsonii	Redheadgrass		SR	G5	S2
Potamogeton strictifolius	Straight-leaf Pondweed		ST	G5	S1
Prunus pensylvanica	Fire Cherry		SR	G5	S2
Scirpus subterminalis	Water Bulrush		SR	G5	S2
Selaginella apoda	Meadow Spike-moss		WL	G5	S1
Sparganium androcladum	Branching Bur-reed		ST	G4G5	S2
Spiranthes lucida	Shining Ladies'-tresses		SR	G4	S2
Stenanthium gramineum	Eastern Featherbells		ST	G4G5	S1
Symphyotrichum boreale	Rushlike Aster		SR	G5	S2
Tofieldia glutinosa	False Asphodel		SR	G5	S2
Utricularia resupinata	Northeastern Bladderwort		SE	G4	S1

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Figure 7 Indiana County Endangered, Threatened, and Rare Species List Page 3 of 4

Indiana County Endangered, Threatened and Rare Species List

County: Kosciusko

Species Name	Common Name	FED	STATE	GRANK	SRANK
Vaccinium oxycoccos	Small Cranberry		ST	G5	S2
Wolffiella gladiata	Sword Bogmat		SE	G5	S1
Zannichellia palustris	Horned Pondweed		SR	G5	S2
Zigadenus elegans var. glaucus	White Camas		SR	G5T4T5	S2
High Quality Natural Community					
Forest - upland dry-mesic Northern Lakes	Northern Lakes Dry-mesic Upland Forest			GNR	S1
Forest - upland mesic Central Till Plain	Central Till Plain Mesic Upland Forest			GNR	S3
Forest - upland mesic Northern Lakes	Northern Lakes Mesic Upland Forest			GNR	S1
Lake - lake	Lake		SG	GNR	S2
Wetland - beach marl	Marl Beach		SG	G3	S2
Wetland - bog acid	Acid Bog		SG	G3	S2
Wetland - bog circumneutral	Circumneutral Bog		SG	G3	S3
Wetland - fen	Fen		SG	G3	S3
Wetland - fen forested	Forested Fen		SG	G3	S1
Wetland - marsh	Marsh		SG	GU	S4
Wetland - meadow sedge	Sedge Meadow		SG	G3?	S1
Wetland - swamp shrub	Shrub Swamp		SG	GU	S2

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Figure 8 Indiana County Endangered, Threatened, and Rare Species List Page 4 of 4

Clean Waters Partnership Public Input

Please help us develop a plan for protecting and improving the waters in our community. By sharing your thoughts and concerns about the waters in our watershed, you will help us identify the most important local concerns.

Attachments:
clean_waters_partnership_handout_20160119.pdf
Date:

First Name: *

Last Name: *

Address: *

City, State, Zip Code: *

Email Address: *

What concerns do you have about our local waters - lakes, streams, and wetlands? : *

What would you like to see changed in order to protect and improve our water quality? : *

Do you live on or have property on a lake or stream? If so, which one?: *

Is your residence location considered rural or urban?: *

How do you connect to our local waterways (ex: fishing, swimming, boating, paddling, viewing wildlife, enjoying the beauty?: *

What is your occupation? (Optional) :

Figure 9 2016 TWF Web Survey to Gather Watershed Input