

APPENDIX H:
**IDEM'S 2024 COMPREHENSIVE BASIN AQUATIC LIFE USE AND
RECREATIONAL USE ASSESSMENTS**

Comprehensive basin aquatic life use and recreational use assessments are made with data collected through IDEM's Probabilistic Monitoring Program.

Table H-1 presents the results of IDEM's comprehensive basin aquatic life use assessments, which are based on site-specific assessments using chemical results in combination with fish and macroinvertebrate community data. Comprehensive aquatic life use assessments for each basin were calculated from site-specific assessment results in the following manner:

- Percent Attaining (% Attaining) = biological assessment results indicating full support (IBI > 35 and mIBI > 35) and no corresponding chemical parameter violations.
- Percent Not Attaining (% Not Attaining) = biological assessment results indicating non-support (i.e., impairment) (IBI ≤ 35 and/or mIBI ≤ 35) and/or corresponding chemical parameter violations.

IDEM uses independent applicability in its comprehensive basin aquatic life use assessments. Therefore, sites where either biological or chemical results indicated impairment were treated as non-supporting in determining attainment for the basin.

Table H-2 presents the results of IDEM's comprehensive basin recreational use assessments which were calculated using site-specific assessment results in the following manner.

- Percent Attaining (% Attaining) = *E. coli* assessment results indicating full support (geometric mean < 125 colony forming units per 100 milliliters).
- Percent Not Attaining (% Not Attaining) = *E. coli* assessment results indicating non-support (i.e., impairment) (geometric mean > 125 colony forming units per 100 milliliters).

Percent attainment and percent non-attainment values are calculated by IDEM staff using commands provided by U.S. EPA National Health and Environmental Effects Research Laboratory, Corvallis, Oregon as well as the R Development Core Team (R Core Team. 2023. [R: A language and environment for statistical computing](#). R Foundation for Statistical Computing, Vienna, Austria.

2024 Indiana Integrated Water Monitoring and Assessment Report - Appendix H

Table H-1: Comprehensive basin aquatic life use assessments showing attainment results calculated using the probabilistic monitoring design.

BASIN	TARGET POPULATION	BASIN SIZE (MILES)	YEAR SAMPLED	YEAR ASSESSED	DATA	% ATTAINING	% NOT ATTAINING	CONFIDENCE LEVEL (%)	CONFIDENCE INTERVAL (%)
WEST FORK WHITE RIVER BASIN	05120201 through 05120203	3775	2020	2021	Biological and Chemical	63.79%	36.21%	95% n=38	+/-15.25%
PATOKA RIVER BASIN	05120209	714	2021	2022	Biological and Chemical	29.02%	70.98%	95% n=39	+/-11.24%
EAST FORK WHITE RIVER BASIN	05120204 through 05120208	4325	2022	2023	Biological and Chemical	41.37%	58.63%	95% n=39	+/-14.03%
GREAT MIAMI RIVER BASIN	05080001 through 05080003	1621	2014	2015	Biological and Chemical	77.78%	22.22%	95% n=38	+/-12.62%
UPPER WABASH RIVER BASIN	05120101 through 05120107	6632	2015	2016	Biological and Chemical	55.71%	44.29%	95% n=36	+/-16.12%

2024 Indiana Integrated Water Monitoring and Assessment Report - Appendix H

BASIN	TARGET POPULATION	BASIN SIZE (MILES)	YEAR SAMPLED	YEAR ASSESSED	DATA	% ATTAINING	% NOT ATTAINING	CONFIDENCE LEVEL (%)	CONFIDENCE INTERVAL (%)
LOWER WABASH RIVER BASIN	05120108 through 05120113	5306	2016	2017	Biological and Chemical	43.15%	56.85%	95% n=37	+/-14.01%
UPPER ILLINOIS RIVER BASIN	07120001 through 07120003	3958	2017	2018	Biological and Chemical	40.61%	59.39%	95% n=38	+/-14.32%
GREAT LAKES BASIN	04040001; 04050001; 04100003; 04100004; 04100005; 04100007	3535	2018	2019	Biological and Chemical	20.32%	79.68%	95% n=37	+/-11.32%
OHIO RIVER TRIBUTARIES	05090203; 05140101; 05140104; 05140201; 05140202	3333	2019	2020	Biological and Chemical	46.44%	53.56%	95% n=38	+/-15.13%

2024 Indiana Integrated Water Monitoring and Assessment Report - Appendix H

Table H-2: Comprehensive basin recreational use assessments showing attainment results calculated using the probabilistic monitoring design.

BASIN	TARGET POPULATION	BASIN SIZE (MILES)	YEAR SAMPLED	YEAR ASSESSED	DATA	% ATTAINING	% NOT ATTAINING	CONFIDENCE LEVEL (%)	CONFIDENCE INTERVAL (%)
WEST FORK WHITE RIVER BASIN	05120201 through 05120203	3775	2020	2021	Bacteriological	25.59%	74.41%	95% n=38	+/-13.87%
PATOKA RIVER BASIN	05120209	714	2021	2022	Bacteriological	18.50%	81.50%	95% n=38	+/-12.35%
EAST FORK WHITE RIVER BASIN	05120204 through 05120208	4325	2022	2023	Bacteriological	13.66%	86.34%	95% n=38	+/-10.92%
GREAT MIAMI RIVER BASIN	05080001 through 05080003	1621	2014	2015	Bacteriological	5.16%	94.84%	95% n=38	+/-7.04%
UPPER WABASH RIVER BASIN	05120101 through 05120107	6632	2015	2016	Bacteriological	8.99%	91.01%	95% n=38	+/-9.10%

2024 Indiana Integrated Water Monitoring and Assessment Report - Appendix H

BASIN	TARGET POPULATION	BASIN SIZE (MILES)	YEAR SAMPLED	YEAR ASSESSED	DATA	% ATTAINING	% NOT ATTAINING	CONFIDENCE LEVEL (%)	CONFIDENCE INTERVAL (%)
LOWER WABASH RIVER BASIN	05120108 through 05120113	5306	2016	2017	Bacteriological	12.57%	87.43%	95% n=38	+/-10.54%
UPPER ILLINOIS RIVER BASIN	07120001 through 07120003	3958	2017	2018	Bacteriological	52.12%	47.88%	95% n=38	+/-15.88%
GREAT LAKES BASIN	04040001; 04050001; 04100003; 04100004; 04100005; 04100007	3535	2018	2019	Bacteriological	28.07%	71.93%	95% n=38	+/-14.29%
OHIO RIVER TRIBUTARIES	05090203; 05140101; 05140104; 05140201; 05140202	3333	2019	2020	Bacteriological	21.49%	78.51%	95% n=38	+/-13.06%