

Lake Table Guidance

This section describes the information contained in each column of the lake table, and defines the abbreviations used in each column. A blank space anywhere in the table means that data is unassessed or unavailable.

Lake Name

All named lakes and unnamed lakes are listed. Lake names are those found on U.S. Geological Survey (USGS) quadrangle maps unless the Wisconsin Geographic Names Council has established a different name. Some lakes are known locally by other names. Where available, local names have been listed with the official name. Township, range, section and quarter-quarter section identify unnamed lakes.

County

This column indicates the county or counties in which the lake is located.

Township, Range, Section

This column identifies the Township, Range, and Section where the lake is located.

Waterbody Identification Code (WBIC)

All waterbodies require a unique waterbody identification code in order to link them to other databases.

Watershed Number: (i.e., "UR01)

The watersheds are identified for each lake listed using the WDNR Master Waterbody File in conjunction with U.S. Geological Survey seven-minute topographic maps.

Surface Area

This column indicates the surface area, in acres, as listed on the WDNR Master Waterbody File, Wisconsin Lakes (WDNR PUBL-FM-800-95REV), Surface Water Resources of Dane County (WDNR, 1985).

Max Depth and Mean Depth

These two columns indicate the maximum depth and mean depth as listed in Wisconsin Lakes (WDNR PUBL-FM-800-95REV).

Lake Type

Each lake type displays unique limnological characteristics based on physical and chemical properties. Production of plant and animal life generally varies in accordance with lake type. Basic classifications and qualifying criteria are:

- DG = Drainage lake. Impoundments and natural lakes with the main water source from stream drainage. Have at least one inlet and one outlet.
- DR = Drained lake. Natural lake with the main water source dependent on the groundwater table and seepage from adjoining wetlands. Seldom has an inlet but will have an outlet of very little flow similar to the seepage lake except for the outlet.
- SE = Seepage lake. Landlocked. Water level maintained by groundwater table and basin seal. Intermittent outlet may be present.
- SP = Spring lake. Seldom has an inlet, but always has an outlet of substantial flow. Water supply dependent upon groundwater rather than surface drainage.

Winterkill

Winterkill (winter oxygen depletion) is a common problem in many shallow Wisconsin lakes. A kill can occur when at least four inches of snow cover the lake, which prevents sunlight from reaching the water. All photosynthesis stops and plants begin to die and decompose. The extent of oxygen loss depends on the total amount of plant, algae and animal matter that decays. Drought increases the chance of winterkill by reducing the volume of water in the lake.

- YES = the lake has experienced winterkill at least once.
- NO (or blank) = winterkill is not known to have occurred on that lake.

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Access

This column categorizes the type of public access available on the lake. If there is more than one access on a lake, only the most highly developed type of public access is listed in this column.

- BR = Boat Ramp
- BF = Barrier-free boat ramp (boating dock and/or wheelchair access)
- P = Barrier-free pier (wheelchair access)
- T = Walk-in trail
- R = Roadside access
- W = Wilderness access
- BW = Barrier-free wilderness access (wheelchair access)
- NW = Navigable water access to lake
- X = Some type of access available, but not specified

SH (Self Help Monitoring)

This column identifies existing or recommended Self-Help monitoring. The following letters in each column signify that Self-Help monitoring is:

- R = recommended
- X = completed
- C = currently being done

HG (Mercury)

Numerous lakes in Wisconsin contain fish with elevated levels of mercury. Fish consumption advisories have been issued for most waterbodies in Wisconsin. Generally, predator fish from soft water, poorly buffered, low pH lakes have the highest concentrations of mercury. The most updated listing of waterbodies with fish consumption advisories can be obtained by writing to: Fish Advisory, Wisconsin Department of Natural Resources, PO Box 7921, Madison, WI 53707.

- R = Fish mercury monitoring is recommended.
- X = Multiple fish populations have been tested for mercury content and a fish consumption advisory DOES NOT exist
- SA = Special advisory. Monitoring has been conducted and a special advisory exists for this body of water
- GA = General advisory. This waterbody falls under a general statewide fish consumption advisory for mercury

MAC (Macrophytes):

This column identifies the status of macrophytes or aquatic plants in the lake. Specifically, it indicates if the lake experiences Eurasian water milfoil and/or purple loosestrife, two invasive non-native species of plants that can impair the lake's aesthetic, ecological, and recreational values.

- EM = indicates that Eurasian water milfoil is present in the lake and may be a problem
- EM-W = lake is part of research project to study the effectiveness of Eurasian water milfoil weevil in reducing and/or eradicating this plant from the lake
- PL = indicates that purple loosestrife is present in the lake and may be a problem

LMO (Lake Management Organization):

Indicates whether or not a lake management organization (LMO) exists for the lake. An LMO can range from a small, loosely organized group of lake property owners to an association to a district, complete with by-laws and taxing authority. In the lakes table, the following letters are used to indicate whether the LMO is an association or district. If the type of organization is not known, but one does exist, an AY@ is used.

- Y = indicates that a LMO does exist
- ASSC = indicates that a lake management association exists. Criteria for Lake Association status are spelled out in Section 144.253(1), Wisconsin statutes. Generally, an Association must be at least 25 members in size, allow membership to anyone living within one mile of the lake for at least one month per year, and have lake protection and improvement as its primary purpose.

LMO (Lake Management Organization): continued

DIST = indicates that a lake management district exists. Criteria for Lake District status can be found in Chapter 33, Wisconsin Statutes. A Lake District is a special purpose unit of government, which is formed through local government approval processes. It has specified boundaries, and its main purpose is to improve or protect a lake and its watershed.

R = recommends that a LMO be developed; this recommendation is usually accompanied by a narrative recommendation in the watershed analysis section.

TSI (Trophic State Index) and TSI Class

These two columns indicate a lake's classification based on water quality factors including concentrations of dissolved oxygen, phosphorus and chlorophyll in water samples. Trophic State Index (TSI) values are calculated for a lake based on a series of water quality sample data. These categories are general indicators of lake productivity.

Olig (Oligotrophic) - TSI values of 39 or less: These lakes are generally clear, cold and free of many rooted aquatic plants or large blooms of algae. Because they are low in nutrients, oligotrophic lakes generally do not support large fish populations. However, they often have an efficient food chain with a very desirable fishery of large predator fish.

Meso (Mesotrophic) - TSI values of 40 - 49: These lakes are intermediate between oligotrophic and eutrophic. The bottoms of these lakes are often devoid of oxygen in late summer months, limiting available habitat for cold water fish and resulting in release of phosphorus from lake sediments into the water column.

Eutr (Eutrophic) - TSI values of 50 or greater: These lakes are high in nutrients. They are likely to have excessive aquatic vegetation and/or experience frequent or severe algae blooms. They often support large fish populations, but are also susceptible to oxygen depletion. Small, shallow lakes are especially vulnerable to winterkill (see above), which can reduce the fishery diversity and quality.

All lakes naturally age, or progress from being oligotrophic to eutrophic. In many places, people have accelerated this process by allowing nutrients from agriculture, lawn fertilizers, streets, septic systems, and urban storm drainage to enter lakes.

Lake Plan or Prot:

This column refers to whether the lake has been the recipient of a lakes planning or lakes protection grant in the past and if either of these grants are recommended for the lake. If a lakes planning or protection grant is recommended, a narrative in the lake's respective watershed section will describe the recommended purpose of the grant.

PLAN = Lake has received a Lakes Management Program Planning Grant in the past.

PROT = Lake has received a Lakes Management Program Protection Grant in the past.

PLAN-R = a Lakes Management Planning Grant is recommended for a specific purpose identified in the lake's individual narrative in the watershed section.

PROT-R = A Lakes Management Protection Grant is recommended for a specific purpose identified in the lake's individual narrative in the watershed section.

PHOSPHORUS SENSITIVITY (P SENS):

This analysis classifies lakes according to their relative sensitivity to phosphorus loading and existing trophic condition. The screening identifies high quality lakes that should receive highest priority for nutrient control management. The analysis first separates lakes into two major categories; lakes that are sensitive to increased phosphorus loading (Class I) and lakes less responsive to changes in phosphorus loading (Class II). Lakes in each general classification are then subdivided into management groups based on data needs or existing water quality conditions. These classification groups are used to establish appropriate management recommendations and priorities.

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PHOSPHORUS SENSITIVITY (P SENS):

Class I - Lakes that are sensitive to increased phosphorus loading.

A - Existing water quality is fair to excellent. These lakes are potentially most sensitive to increased phosphorus loading.

B - Existing water quality is poor to very poor. These lakes are less sensitive to increased phosphorus loading than Group A.

Ins - Data is insufficient to assess trophic condition; classification monitoring recommended

Class II - Lakes less responsive to changes in phosphorus loading.

A - Existing water quality is fair to excellent; may not be as sensitive to phosphorus loading as Class I lakes.

B - Existing water quality is poor to very poor; low sensitivity to increased phosphorus loading.

Ins - Data inadequate or insufficient to assess trophic condition.

Impairments: Sources and Impacts

These two columns indicate probable sources of impact to the lake and the impacts, or water quality problems that are present in the lake. Sources and impacts are identified using the best professional judgment of field staff. The following tables explain the source and impact codes used in these columns. There is almost always a complex relationship between pollutant sources and resource impacts, and the table below is not intended to show a relationship between specific sources and impacts.

Source

AGSPR - Agricultural land spreading site

PS - Point sources of pollutants

PSB - Streambank pasturing

PWL - Woodlot pasturing

RS - Roadside construction erosion

SB - Streambank erosion

EX-PL - Exotics - purple loosestrife

WLF - Water level fluctuations

BY - Barnyard or exercise lot runoff (animal operations)

HM - Hydrological modification caused by damming, ditching, or wetland drainage

SEP - Septic systems are or may be causing water quality problems

NPS - Unspecified nonpoint sources of pollution

CE - Construction site erosion

CL - Cropland erosion

DEV - Intense development pressure

EX-CP - Exotics - curly leaf pondweed

EX-EWM - Exotics - Eurasian milfoil

URB - Urban storm water runoff

INT - Internal loading

Impact

ACC - Access problems. The general public is unable to access a navigable waterbody, which is considered a water of the state.

MIG - Fish migration interference

NH3 - Ammonia toxicity

NUT - Excessive nutrient enrichment

CL - Chlorine toxicity

COM - Competition (by introduced species)

DO - Low dissolved oxygen concentration

FLOW - Unnatural stream flow fluctuations

HAB - Aquatic or terrestrial habitat degradation

HM - Heavy metal toxicity

HG - Mercury advisory

MAC - Undesirable macrophyte or algal plant growth

WKILL - Winterkill that occurs as a result of human activity

ORG - Organic chemical toxicity/bioaccumulation

AD - Animal deformity

ALG - Undesirable algae growth

BAC - Bacteria contamination

PCB - PCB bioaccumulation

PH - pH fluctuations or extreme high or low

PST - Pesticide/herbicide toxicity

SC - Sediment contamination

SED - Excessive Sedimentation

TOX - General toxicity problems

TURB - Turbidity problems

Comments

MB = Significant use/stop for waterfowl and migratory water birds

Lower Rock River Basin Lakes Table

Please refer to the State of the Rock River Basin Report web page to view this Table

Upper Rock River Basin Lakes Table

Please refer to the State of the Rock River Basin Report web page to view this Table

Stream Tables Guidance

The following information is included in the stream tables. Unknowns in the tables indicate that we have insufficient data to assess the given stream(s). In the future we hope to provide data on these unassessed waterbodies.

Name of Stream:

All named streams and some unnamed streams are listed. Stream names are those found on U.S. Geological Survey (USGS) quadrangle maps unless the Wisconsin Geographic Names Council has established a different name. Streams in parentheses indicate a local name for the stream. Unnamed streams are identified by location of the stream mouth as indicated by township, range, and section.

Waterbody Identification Code (WBIC): All waterbodies have been assigned a waterbody identification code by the state to help in identifying streams and stream locations.

County: This column indicates the county or counties in the stream is located.

Length: The stream length is either the total length of the stream, or the starting and ending mile of the portion of the stream with a specific classification or biological use. The stream mile at the stream mouth is zero (“0”) and increases as one moves upstream.

Existing Use: This column indicates the biological use that the stream or stream segment currently supports. This is not a designation or classification; it is based on the current condition of the surface water and the biological community living in that surface water. Information in this column is not designed for, and should not be used for, regulatory purposes. A “U” indicates that the existing use is unknown.

The existing uses are taken from the biological use categories listed below. These categories are defined in NR102(04)(3) under fish and aquatic life uses, and are the same categories used to describe the stream’s codified use. A cold water community that supports trout may be indicated by a trout class (I, II, or III) based on the document, Wisconsin Trout Streams (DNR Publ. 6-3600[80]). This publication is currently being revised. As a result, some of the stream segments have a different use than that listed in this document.

Existing use is determined through recent surveys and/or through the professional judgement of WDNR Personnel. The approximate length or portion of the stream meeting each of the use classes is indicated in the “Length” column.

COLD (Cold Water Community) includes surface waters that are capable of supporting a community of cold water fish and other aquatic life or that serve as a spawning area for cold water fish species.

COLD I (Cold Water Community) high-quality stream where populations are sustained by natural reproduction.

COLD II (Cold Water Community) stream has some natural reproduction but may need stocking to maintain a desirable fishery;

COLD III (Cold Water Community) stream has no natural reproduction and requires annual stocking of legal-size fish to provide sport fishing.

WWSF (Warm Water Sport Fish Communities) includes waters capable of supporting a community of warm water sport fish or serving as a spawning area for warm water sport fish.

WWFF (Warm Water Forage Fish Communities) includes surface waters capable of supporting an abundant, diverse community of forage fish and other aquatic life.

LFF (Limited Forage Fishery) (intermediate surface waters); includes surface waters of limited capacity due to low flow, naturally poor water quality or poor habitat. These surface waters are capable of supporting only a limited community of tolerant forage fish and aquatic life.

LAL (Limited Aquatic Life) (marginal surface waters); includes surface waters severely limited because of low flow and naturally poor water quality or poor habitat. These surface waters are capable of supporting only a limited community of aquatic life.

Potential (Attainable) Use: This column indicates the biological use that the investigator believes the stream or stream segment could achieve through proper management of “controllable” pollution sources. Beaver dams, hydroelectric dams, low gradient streams, and naturally occurring low flows are generally not problems that can be controlled.

The potential use may be the same as the existing use or it may be higher. Abbreviations for “potential use” are the same as those used in the “existing use” column. Unless otherwise noted, the source for trout streams was Wisconsin Trout Streams (DNR Publ. 6-3600[80]), Wis. Adm. Code NR102.10 and NR102.11, and the professional judgment of WDNR personnel.

Supporting Potential Use: This column indicates whether a stream is threatened, or is fully, partially, or not meeting its potential biological use. An entry in this column shows the relationship between the stream’s current and potential biological use.

Full (Fully Supporting)

A stream or stream segment’s existing biological use is the same as its potential biological use ($E = P$). This includes stream or stream segments that are not affected and stream or stream segments that have culturally irreversible impacts. An example of culturally irreversible impacts are those effects in a river system with an “optimally operating” dam—a dam that operates with minimal to no effect on the fish and aquatic life community assemblage, productivity, and diversity. Note that fairly to poorly operating dams are not considered “culturally irreversible” and their effect on biological resources is factored into the use support designation (see partially supporting).

Full-Thr (Fully Supporting/Threatened)

A stream or stream segment’s existing biological use is the same as its potential biological use ($E = P$), but there is a clear and imminent “threat” to the existing use remaining at its current level of biological productivity and ecological health. This threat could be due to actions likely to occur on or to the stream and/or in the watershed, such as:

1. Rapid commercial, residential, and/or industrial development in the watershed,
2. The advent of large-scale industrial operations in the watershed,
3. Planned or active channel modifications that have been, or will be permitted, or cannot be regulated under existing state or federal rules (i.e., drainage districts).

Part (Partially Supporting)

A stream or stream segment’s existing biological use is the same as its potential biological use, except that implementation of management practices could enhance the overall ecological health of the biological community. Management practices in this category include modification of hydro-regimes to reduce the impact of dam operations on the biological community.

Thus, $E = P$, but the potential use assessment is below the stream or stream segment’s maximum biological potential and this “less than optimal” condition is reversible.

Not (Not Supporting)

When a stream or stream segment’s existing biological use is less than its potential biological use by a factor of 1 or more of the following codified use classifications: WWSF, WWFF, LFF, LAL, and Cold (includes Cold I, II, and III in one group). Thus, $E < P$, with problems considered reversible by implementation of management actions.

Stream Tables Guidance (continued)

Codified Use: This is the waterbody's classification that is formally and legally recognized by NR102 and 104, Wis. Adm. Code. This column shows the classification that will be used to determine water quality criteria and effluent limits. A stream can obtain a codified use by applying formal stream classification procedures, which are undergoing revision in 1996. Classifications in this column are derived from:

1. Streams classified and listed in NR102 and NR104.
2. Streams formally classified during the WPDES permitting process. These streams are surveyed and classified to provide the basis for the permit's effluent discharge limitations.
3. Trout streams as defined by Wisconsin Trout Streams (1980) and listed in NR 104.
4. ORW and ERW streams officially approved as such by the DNR board and listed in NR102.10 and NR102.11. Officially, ORW/ERW waterbodies are not fish and aquatic life use designations but are a separate category for the WDNR antidegradation program. These waterbodies also receive a fish and aquatic life use classification for the purpose of determining water quality criteria and/or effluent discharge limitations. See description of ORW and ERW below.

Outstanding Resource Waters, have excellent water quality and high-quality fisheries. They do not receive wastewater discharges; these point source discharges will not be allowed in the future unless the quality of such discharges meets or exceeds the quality of the receiving water. This classification includes national and state wild and scenic rivers and the highest quality Class I trout streams.

Exceptional Resource Waters have excellent water quality and valued fisheries but may already receive wastewater discharges or may receive future discharges necessary to correct environmental or public health problems. All COLD I streams are ERW's, but not all ERW's are COLD I streams.

All waters not officially codified in NR102 or NR104 will be codified Warm Water Sport Fishery (WWSF) which is the default (DEF) classification and listed as "DEF."

303(d) Status: This column states whether a stream or stream segment is currently on the EPA's 303(d) list of impaired waterbodies or should be added to the list. Streams or segments on this list have failed to meet one or more water quality standards are considered "impaired."

Use Impairments - Sources and Impacts:

This column indicates probable sources of pollution in the stream and types of water quality problems present (impact). Often more detail is provided in the narrative. Following is a key to abbreviations in the stream tables: Unless otherwise shown, these are generalized for the entire stream

Source (cause of problem). This is the source of threat or impairment.

| | |
|--|--|
| ACC - No or limited access | BDAM - Beaver dam |
| BY - Barnyard or exercise lot runoff | CE - Construction site erosion |
| CL - Cropland erosion | CM - Cranberry marsh |
| DEV - Intense development pressure | DRDG - Dredging |
| EX - Introduced species | F - Forestry (logging and roads, stream crossings) |
| LF - Landfill | MS - Mine wastes and/or roaster piles |
| NMM - Non-metallic mining | NPS - Unspecified nonpoint sources |
| PSB - Streambank pasturing | PSI - Point source, industrial discharge |
| PWL - Woodlot pasturing | RS - Roadside erosion |
| RF - Rough fish population | SB - Streambank erosion |
| URB - Urban storm water runoff | |
| HM - Hydrological modification (dam, ditching, wetland drainage) | |
| PSM - municipal treatment plant discharge - point | |

Impact (effect or impact of source on a stream)

(cause) impact or stressor, the effect on the stream as a result of the source

| | |
|---|-------------------------------------|
| AD - Animal deformity | BAC - Bacteriological contamination |
| CL - Chlorine toxicity | DO - Dissolved oxygen |
| FAD - Fish advisory | FKILL - Fish kill |
| HM - Heavy metal toxicity | MIG - Fish migration interference |
| NH3 - Ammonia toxicity | NUT - Nutrient enrichment |
| PCB - PCB bioaccumulation | PST - Pesticide/herbicide toxicity |
| SC - Sediment contamination | SED - Sediment embeddedness |
| TOX - General toxicity problems | TURB - Turbidity |
| COM - Competition (i.e, encroachment by introduced species) | |
| ORG - Organic chemical toxicity/bioaccumulation | |
| FLOW - Stream flow fluctuations caused by unnatural conditions | |
| HAB - Habitat (in-stream sedimentation, scouring, etc.) | |
| MAC - Undesirable rooted aquatic plant (macrophyte) or algal growth | |
| pH - pH (fluctuations or extreme high or low) | |
| TEMP - Temperature (fluctuations or extreme high or low) | |

Monitored, Evaluated, or Unassessed: This column states generally whether a stream has been assessed. It does not specify which stream segments have been monitored or evaluated. The terms monitored, evaluated or unassessed are defined as the following:

Monitored: A stream has been “monitored” for the purposes of Wisconsin water quality management plans and/or Wisconsin’s Water Quality Assessment Report to Congress (305[b]). This data is site-specific data collected in the past five years and is used to determine the quality or integrity of the resource.

Evaluated: A stream has been “evaluated” if information other than site-specific data has been collected. Sources of “evaluated” information may include:

1. Site-specific data that is more than five years old,
2. Information on file provided by the public or others,
3. Best professional judgment of a WDNR biologist or a WDNR fish manager.

Unassessed: A stream has been not been assessed.

Data Level: In this column, indicate what level of data was used to make your decisions on this stream/segment. Ideally, the number is a composite of physical, chemical, biological and habitat data. Generalized for entire stream

Bioassessments:

BI: Visual observations of biota, limited monitoring and extrapolations from other sites - unknown or low precision and sensitivity - professional biologist not required.

B2: One assemblage required with reference conditions of available, biotic index or narrative evaluation of historical records; limited to single sampling and site specific studies; low to moderate precision and sensitivity, professional biologist may provide oversight.

B3: Single assemblage, reference condition preferred; biotic index used or supplemented by historical records. Monitoring targeted sites during a single season; may be site specific study but may include spatial coverage for watershed level assessments. Moderate precision and sensitivity; professional biologist performs survey or training for sampling and assessment.

Bioassessments: (continued)

B4: generally two assemblages, may be one if data quality high. Regional reference conditions use; biotic index used. Monitoring over 1 -2 sampling seasons; broad coverage of sites for site specific or watershed specific assessments; use of probabilistic design. High precision and sensitivity; professional biologist surveys and assesses.

Habitat:

H1: Visual observation of habitat characteristics; no true assessment; documentation or readily discernible land use characteristics that might alter habitat quality, no reference conditions.

H2: Visual observation of habitat characteristics and simple assessment; use of land use maps for characterizing watershed condition; reference condition preestablished by professional scientist.

H3: Visual-based habitat assessment using SOPs; may be supplemented with quantitative measurements of selected parameters; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment.

H4: Assessment of habitat based on quantitative measurements of instream parameters, channel morphology, and floodplain characteristics; conducted with bioassessment; data on land use compiled and used to supplement assessment; reference condition used as a basis for assessment.

Toxicological Approaches:

T1: Any one of the following: Acute or chronic WET, Acute ambient, or acute sediment

T2: Any of the following: Acute or chronic ambient, acute sediment, acute and chronic WET for effluent dominated stream

T3: chronic ambient or acute or chronic sediment, acute and chronic WET for effluent dominated stream

T4: Both of the following: acute and chronic ambient and acute or chronic sediment

Physical/Chemical

P1: any one of the following: water quality with grab sample or water data extrapolated from upstream or downstream, monitoring data more than five years old, Best Professional Judgement (BPJ) based on land use data, etc.

P2: Any one of the following: water quality with grab sample or rotating basin surveys with multiple visits or automatic sampling synthesis of existing or historical info on fish contaminant levels, screening models based on loading data (not calibrated or verified).

P3: Any one of the following, composite or a series of grab water samples (diurnal coverage as appropriate), calibrated models.

P4: All of the following: water quality monitoring used composite or series of grabs, limited sediment quality samples and fish tissue analyses at sites with high probability of contamination.

Trend: This column can be based upon Best Professional Judgement (BPJ), or by comparing data from past plans to find that a waterbody has improved over previous assessments, or declined. This decline/improvement should not be the result of gaining data, but a relative assessment of changes occurring on the waterbody. The stream may be improving (I), stable (S), declining (D) or unknown (U).

References: The reference material used to complete the table for each stream is indicated by a number. A numeric list of references is provided for each watershed. Streams for which there are recommendations, or identified water quality impairments should have at least one reference listed in this column.

Lower Rock River Basin Stream Table References

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Lower Rock River Basin Stream Table

Please refer to the State of the Rock River Basin Report web page to view this Table

Upper Rock River Basin Stream Table

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