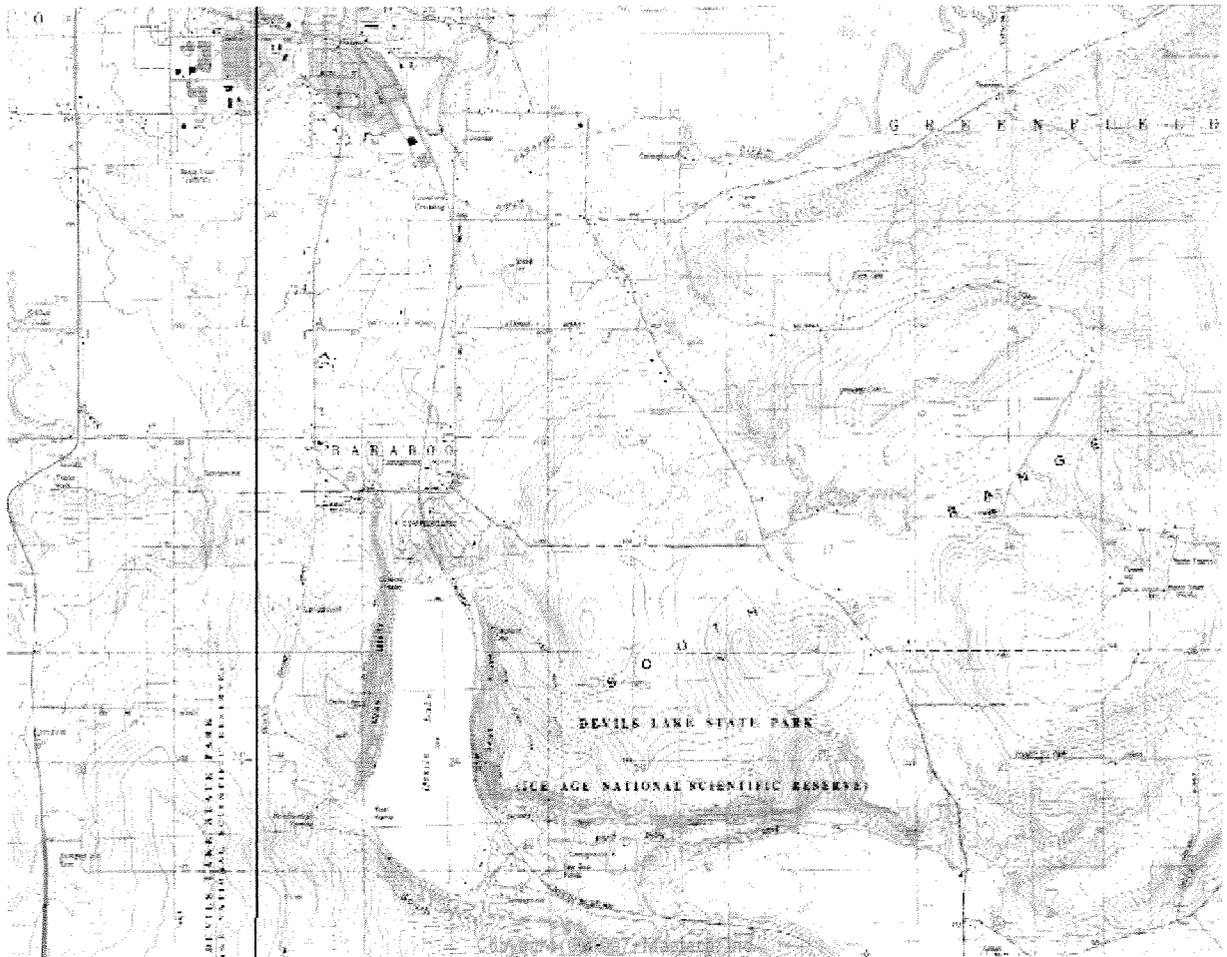




USE CLASSIFICATION OF AN INTERMITTENT BARABOO  
RIVER TRIBUTARY (BABBLING BROOK)  
Seasonally Protected Use Designation



Prepared by David W. Marshall,  
South Central Region FH  
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A high gradient (35.4 ft./mile) intermittent stream originates east of Devil's Lake and flows north to the confluence with the Baraboo River. The stream is unnamed on the U.S.G.S. quadrangle and is indicated intermittent the entire length. There is no mention of the stream in *Surface Water Resources of Sauk County* but it is locally known as Babbling Brook. While Babbling Brook frequently dries up its entire length from late summer through early fall each year, the water quality is good and the stream supports a diverse macroinvertebrate community. Lillie and Isenring (1996) identified 25 taxa including three stoneflies. Most species represent good to excellent water quality and the Hilsenhoff Biotic Index was calculated at 3.87. Among the species found at that time, the mayfly *Ameletus lineatus* and stonefly *Allocapnia* are temporary stream indicators (Hilsenhoff, 1995).

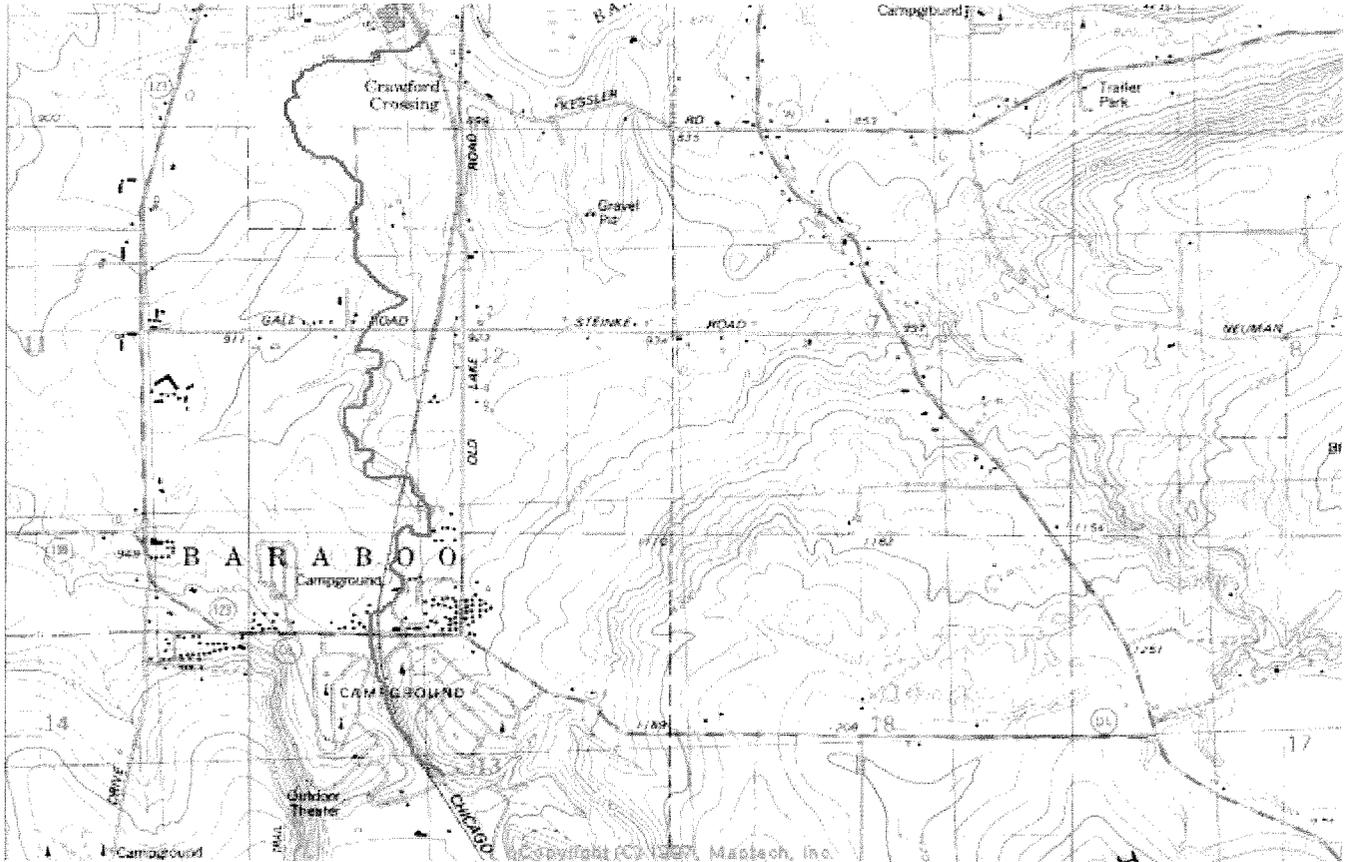
Babbling Brook drains a pristine area within the Baraboo Range and Devil's Lake State Park. Due to the unique quartzite geology, the water is unusually soft for southern Wisconsin. Lillie and Isenring (1996) measured the pH and conductivity as 7.0 s.u. and 75 umhos cm respectively.

As part of the Devil's Lake Management Plan, a late summer hypolimnetic withdrawal and discharge are proposed to enter the stream at the north entrance road to the park (432544.9 degrees lat. and 894346.5 degrees long.). The hypolimnetic withdrawal is a management effort to reduce unnaturally high phosphorus levels in an otherwise oligotrophic lake. While there are no significant sources of phosphorus in the mostly natural watershed at this time, historic sources including poorly designed septic systems, former farms and a leaking park sewer main caused substantial phosphorus loading to the lake. A late summer hypolimnetic withdrawal would restore this important resource and reduce internal phosphorus loading.

The proposed discharge site is located about 25 meters below the macroinvertebrate and water chemistry sampling site. To protect the macroinvertebrate community structure and maximize phosphorus removal from the lake, a Seasonally Protected Use Designation of limited aquatic life (LAL) would allow the hypolimnetic withdrawal only during late summer and early fall when the stream is completely dry and invertebrates are in a diapause stage. Aquatic insect expert Dr. William Hilsenhoff (personal communication) considers the diapause stage insects to be tolerant of environmental changes, including the proposed hypolimnetic discharge. The use classification would remain full fish and aquatic life (FFAL) the remainder of the year to protect the invertebrate community when life stages development and growth are activated. There are no records of fish in the stream and none were found during an April 2000 fish shocking survey below CTH DL.

Within most of the park, Babbling Brook offers high scenic value during periods of flow. The clear soft water passing over granite boulders is one of the many popular park features. Below the north entrance park roadway, the stream is channelized along the railroad tracks for 0.47 mi. before entering agricultural lands and a golf course further downstream.

Seasonal Protection Use Designation: From the point of discharge at the north park entrance road, 3.32 miles downstream to the rail road crossing below Lake Street, the classification is FFAL from November 1 through July 31 each year. From August 1 through October 31 each year, the use classification is LAL to reflect the seasonally dry run habitat.



Babbling Brook Flows (cfs)  
USGS, 1998

Month	Min.	Mean	Max
Feb.	1.8	3.1	7.0
March	1.0	3.2	15.0
April	2.1	6.7	35.0
May	0.16	1.9	6.3
June	0	3.0	30.0
July	0	0.5	2.0
Aug.	0	0.8	7.8
Sept.	0	0.3	2.3

## References

Ball, Joseph R., Tom Smith and C. W. Threinen. 1971. Surface Water Resources of Sauk County. WDNR.

Hilsenhoff, William L. 1995. Aquatic Insects of Wisconsin. University of Wisconsin-Madison.

Lillie, Richard A. and Rebecca S. Isenring. 1996. Comparisons Among Aquatic Insect Communities of Streams Draining the Baraboo Range. Trans. Wisc. Acad. Sciences, Arts and Letters. Vol.84.

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