



**Wisconsin's 2010-11
Citizen-Based Monitoring Partnership Program
and
Trout Unlimited Driftless Area Restoration Effort (TUDARE)**



TUDARE Stream Monitoring Sites Established in 2010-2011

Summary Prepared By:

**Jeff Hastings, TUDARE Project Manager, Trout Unlimited
Kent Johnson, Kiap-TU-Wish Chapter, Trout Unlimited**

September 2011

Driftless Area, WI

With funding provided by Wisconsin's 2010-11 Citizen-Based Monitoring Partnership Program, 12 new stream monitoring sites were established on three streams located in Wisconsin's Driftless Area.

The three streams selected for monitoring include Creek 8-8 near Coon Valley, WI, Rocky Branch Creek in River Falls, WI, and Wilson Creek near Knapp, WI (see map below). The locations of these streams provide wide geographical coverage of Wisconsin's Driftless Area, ranging from the southwest (Creek 8-8), to the north (Wilson Creek), to the northwest (Rocky Branch Creek).

All three streams are valuable coldwater resources with favorable temperature regimes and good water quality, which support natural reproduction of trout. However, all three streams suffer from habitat degradation, due to past and current land use practices and watershed impacts. Hence, these stream locations are scheduled for WDNR restoration work during the 2011-2013 period. Pre- and post-monitoring will help determine the effectiveness of the stream restoration work for improving aquatic habitat and stream temperature, thereby greatly enhancing trout populations, but also providing resilience to climate change.

Trout Unlimited volunteers are conducting the monitoring work at these three stream locations, including pre- and post-restoration monitoring of stream temperature, air temperature, and habitat conditions. Protocols for conducting pre- and post-monitoring of stream restoration projects¹ were developed by Trout Unlimited Driftless Area Restoration Effort (TUDARE) and WDNR staff, as a part of this grant. WDNR staff are conducting pre- and post-restoration monitoring of trout populations, to assess the biotic response to improved habitat and temperature conditions.

A unique characteristic of the three streams selected for this restoration and monitoring work is their close proximity to population centers, including the towns of Coon Valley and Knapp, WI and the City of River Falls, WI (see the individual stream maps below). This proximity provides easy availability of greatly enhanced recreational trout fisheries to area residents. The improved fisheries also tend to serve as tourist destinations, thereby benefiting local economies². An additional benefit of the Rocky Branch Creek restoration project in River Falls will be the establishment of recreational trails and park land along the riparian corridor.

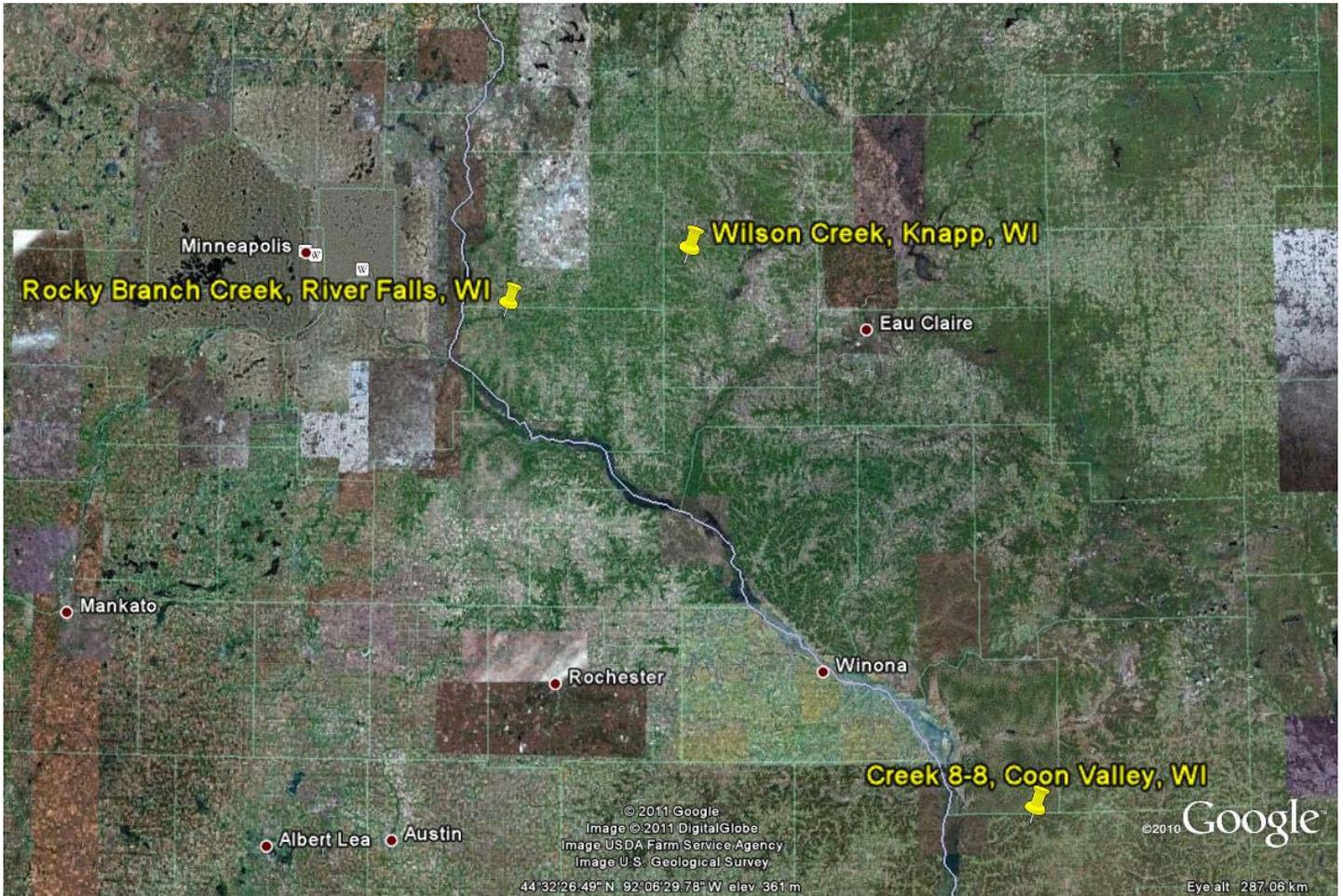
¹ TUDARE Stream Monitoring Protocols for Evaluating Stream Restoration Benefits, Including Resilience to Climate Change: Assessment of Pre- and Post-Restoration Temperature and Habitat Conditions (Hastings, Johnson, and Mitro, September 2011)

² The Economic Impact of Recreational Trout Angling in the Driftless Area (TUDARE, April 2008)

TUDARE Stream Restoration Projects Driftless Area, WI

Stream Monitoring Sites

(Funding provided by Wisconsin's Citizen-Based Monitoring Partnership Program)



Monitoring conducted by:

Clear Waters Chapter

Kiap-TU-Wish Chapter

Oak Brook Chapter

Trout Unlimited



Creek 8-8 Stream Restoration Project

Coon Valley, WI

Stream Monitoring

Creek 8-8 is located in the southwest corner of Wisconsin's Driftless Area, on the eastern outskirts of Coon Valley, WI (Vernon County). The stream is a tributary of Coon Creek, which travels through Coon Valley. The section of Coon Creek in Coon Valley has been previously restored, with the restoration work integrating a trail system along the riparian corridor, thereby providing an excellent community fishing and recreational resource.

Like Coon Creek, Creek 8-8 supports a naturally-reproducing population of brown trout. However, trout numbers are limited due to habitat degradation, which is attributed to past and current land use practices and watershed impacts. A 0.7-mile reach of Creek 8-8 is scheduled for WDNR restoration work during the 2011-2012 period. This restoration reach is located immediately upstream (south) of Vernon County Road P, near the mouth of the creek.

Pre- and post-monitoring will help determine the effectiveness of Creek 8-8 restoration work for improving aquatic habitat and stream temperature, thereby greatly enhancing trout populations, but also providing resilience to climate change. Wally Bock, a Trout Unlimited volunteer from the Oak Brook Chapter in Oak Brook, Illinois, is conducting the Creek 8-8 monitoring work, including pre- and post-restoration monitoring of stream temperature, air temperature, and habitat conditions. Protocols for conducting pre- and post-monitoring of stream restoration projects were developed by Trout Unlimited Driftless Area Restoration Effort (TUDARE) and WDNR staff, as a part of this grant (Hastings, Johnson, and Mitro, September 2011).

In October 2010, Wally Bock, with the assistance of Trout Unlimited volunteer Kent Johnson (Kiap-TU-Wish Chapter) and Jeff Hastings (TUDARE Project Manager), established continuous stream temperature monitoring sites at three locations in the Creek 8-8 restoration reach (see project map below). With the permission of an adjoining property owner on the west side of the Creek 8-8 restoration reach, a weather station was also established, for continuous measurement of air temperature, relative humidity, and dew point (see project map below). Pre-restoration monitoring of stream and air temperature has been conducted since October 2010. In June 2011, Wally Bock conducted a pre-restoration habitat assessment (stream width, water depth, water velocity, and canopy cover) at nine transect locations situated throughout the Creek 8-8 restoration reach.

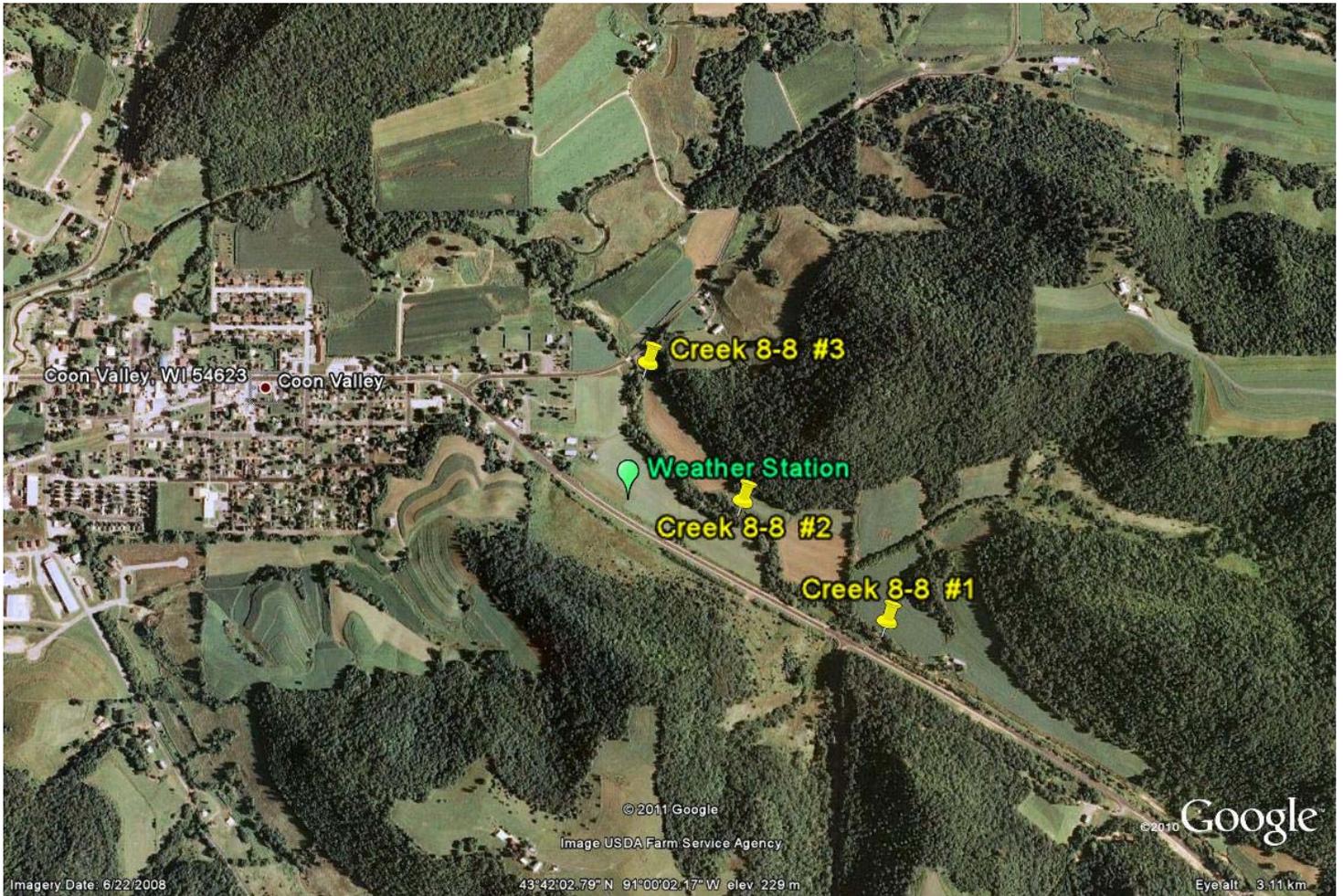
After the Creek 8-8 restoration work is complete in 2012, post-restoration monitoring will be conducted to document improvements in stream temperature and habitat conditions.

WDNR staff are conducting pre- and post-restoration monitoring of Creek 8-8 trout populations, to assess the biotic response to improved habitat and temperature conditions.

Creek 8-8 Stream Restoration Project Coon Valley, WI

Stream Monitoring Sites

(Funding provided by Wisconsin's Citizen-Based Monitoring Partnership Program)



Monitoring conducted by:

Wally Bock
Oak Brook Chapter
Trout Unlimited



Rocky Branch Creek Stream Restoration Project River Falls, WI

Stream Monitoring

Rocky Branch Creek is located in the northwest corner of Wisconsin's Driftless Area, within the City of River Falls, WI (Pierce County). The stream is a tributary of the Kinnickinnic River.

Rocky Branch Creek is a Class I trout stream that supports a naturally-reproducing population of brown trout in the lower reaches and brook trout in the upper reaches. However, trout numbers are limited due to severe habitat degradation, which is attributed to past and current land use practices and watershed impacts. A 1.0 mile reach of Rocky Branch Creek and a 0.2 mile reach of Creek 12-11 (a Rocky Branch tributary) are scheduled for WDNR restoration work in 2013. The Rocky Branch Creek restoration reach is located immediately upstream (south) of the creek's confluence with the Kinnickinnic River, and travels through unimproved public park property owned by the City of River Falls and River Falls Township. This project will provide an excellent opportunity for WDNR, the City of River Falls, and River Falls Township to improve stream habitat, greatly enhance trout fishing opportunities, and establish new recreational trails and park land along the riparian corridor, thereby creating an outstanding community amenity.

Pre- and post-monitoring will help determine the effectiveness of Rocky Branch Creek restoration work for improving aquatic habitat and stream temperature, thereby greatly enhancing trout populations, but also providing resilience to climate change. Kent Johnson, a Trout Unlimited volunteer from the Kiap-TU-Wish Chapter based in Hudson, Wisconsin, is conducting the Rocky Branch Creek monitoring work, including pre- and post-restoration monitoring of stream temperature, air temperature, and habitat conditions. Protocols for conducting pre- and post-monitoring of stream restoration projects were developed by Trout Unlimited Driftless Area Restoration Effort (TUDARE) and WDNR staff, as a part of this grant (Hastings, Johnson, and Mitro, September 2011).

In September 2011, Kent Johnson established continuous stream temperature monitoring sites at six locations in the Rocky Branch Creek restoration reach (see project map below). The City of River Falls weather station at City Hall will be used for continuous measurement of air temperature, relative humidity, and dew point. Pre-restoration monitoring of air temperature has been conducted since January 2011, and pre-restoration monitoring of stream temperature will begin in spring 2012. In spring 2013 (prior to the start of stream restoration work), Kent Johnson will conduct a pre-restoration assessment of Rocky Branch Creek habitat conditions (stream width, water depth, water velocity, and canopy cover) at multiple transect locations situated throughout the Rocky Branch Creek restoration reach.

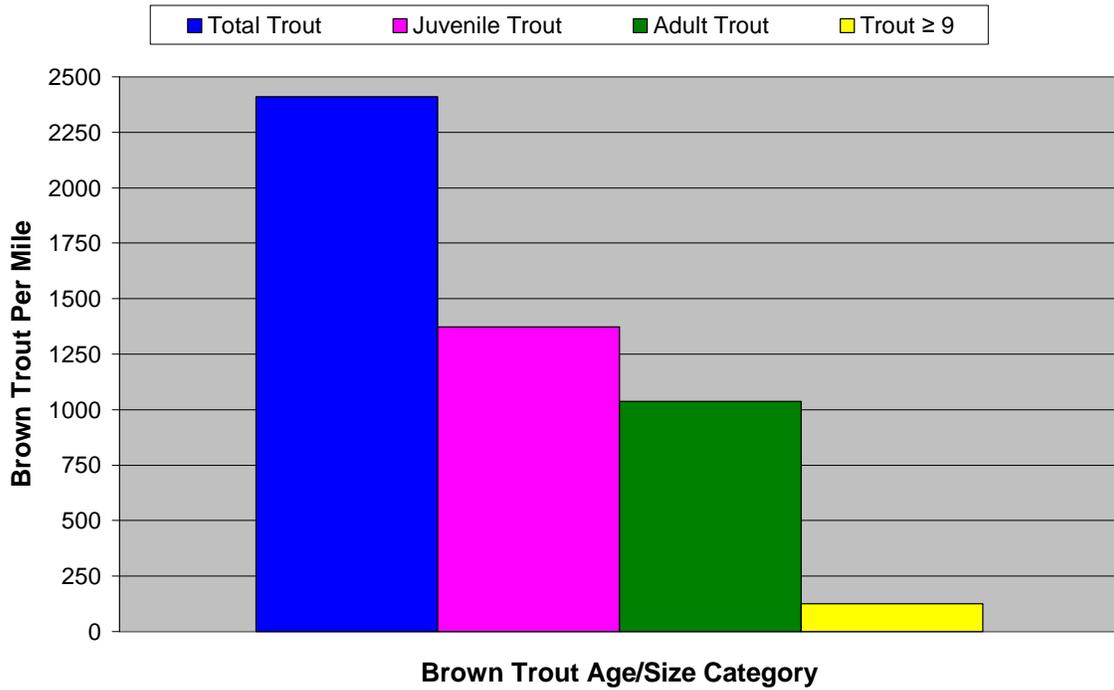
After the Rocky Branch Creek restoration work is complete in 2013, post-restoration monitoring will be conducted to document improvements in stream temperature and habitat conditions.

WDNR staff are conducting pre- and post-restoration monitoring of trout populations in Rocky Branch Creek, to assess the biotic response to improved habitat and temperature conditions. In June and July 2010, WDNR staff conducted pre-restoration trout surveys at four locations (Stations 1B, 1C, 1D, and 1E) within the Rocky Branch Creek restoration reach. In June 2011, pre-restoration trout surveys were again conducted at two (Stations 1B and 1C) of the four locations surveyed in 2010. The 2010 survey results at Station 1D, near the mid-point of the restoration reach, are depicted below. Both brown trout and brook trout were present at this survey station. The brown trout population was 2,410 fish per mile, with 1,373 fish per mile (57%) being juveniles (<5.5 inches) and 1,037 fish per mile (43%) being adults (≥ 5.5 inches). The population of “legal” brown trout (≥ 9 inches; those able to be kept by fishermen) was 124 fish per mile (5%). The brook trout population was 147 fish per mile, with 97 fish per mile (66%) being juveniles (<4.6 inches) and 50 fish per mile (34%) being adults (≥ 4.6 inches). The population of “legal” brook trout (≥ 8 inches; those able to be kept by fishermen) was 23 fish per mile (16%).

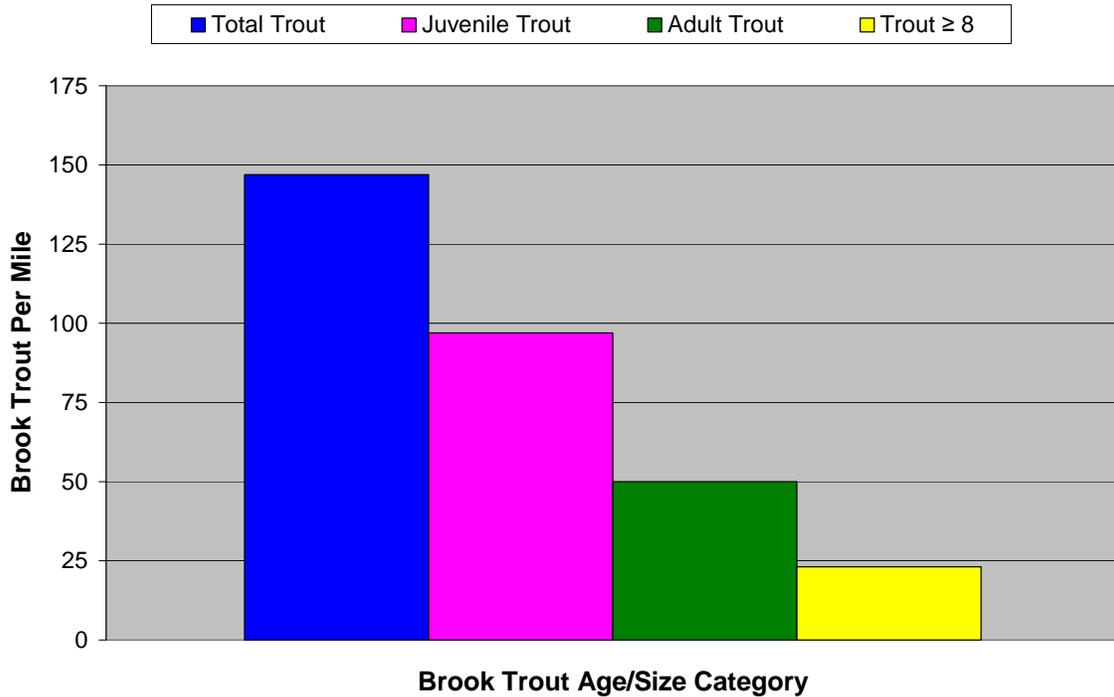


ROCKY BRANCH CREEK
Station 1D
City of River Falls
Pierce County
Class I Trout Stream

Rocky Branch Creek Pre-Restoration Trout Survey: July 2010



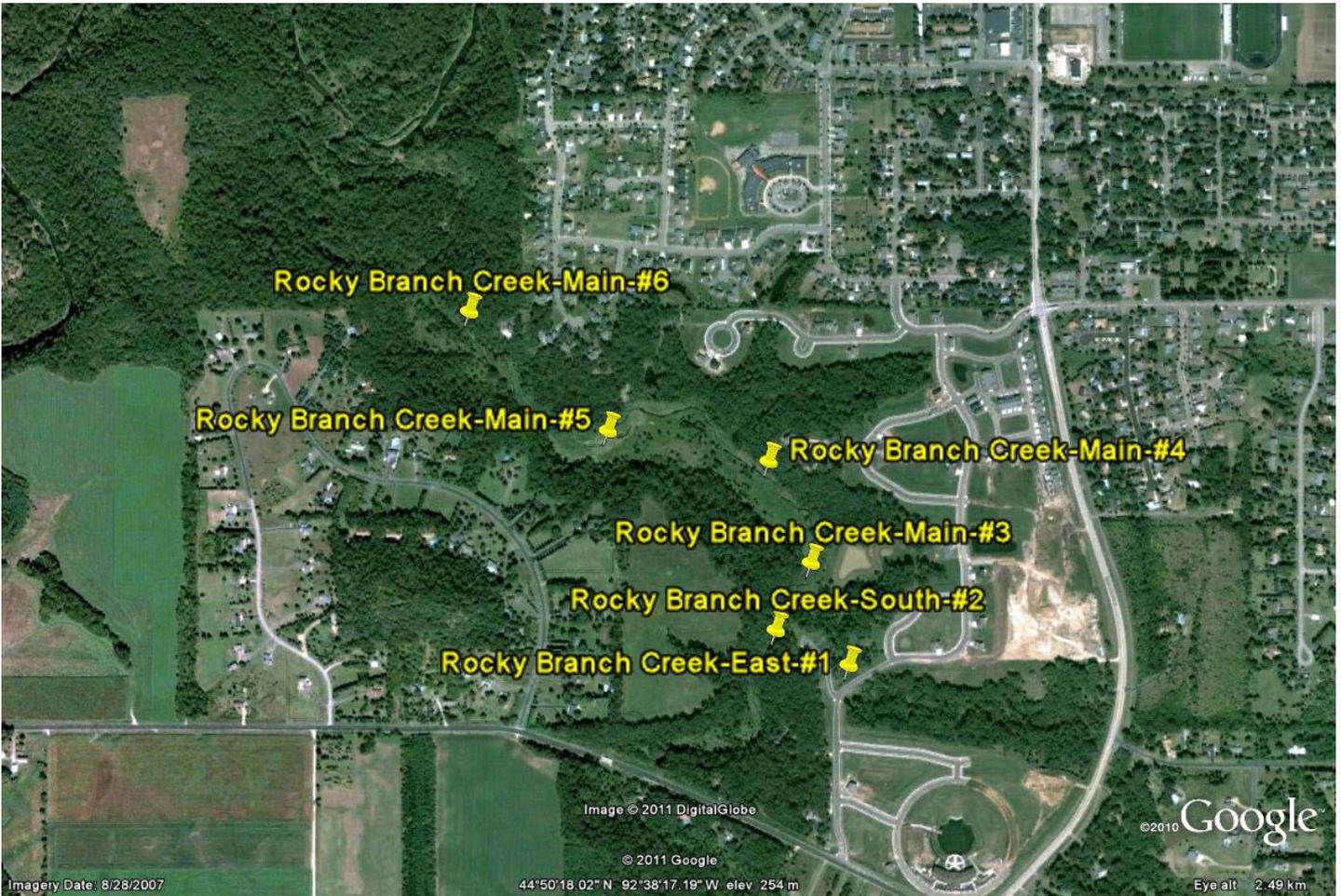
Rocky Branch Creek Pre-Restoration Trout Survey: July 2010



Rocky Branch Stream Restoration Project River Falls, WI

Stream Monitoring Sites

(Funding provided by Wisconsin's Citizen-Based Monitoring Partnership Program)



Monitoring conducted by:

Kent Johnson
Kiap-TU-Wish Chapter
Trout Unlimited



Wilson Creek Stream Restoration Project Knapp, WI

Stream Monitoring

Wilson Creek is located on the northern-most edge of Wisconsin's Driftless Area, on the northern outskirts of Knapp, WI (Dunn County). The stream is a tributary of the Red Cedar River.

Wilson Creek is a Class I trout stream that supports a naturally-reproducing population of brook trout. However, trout numbers are limited due to habitat degradation, which is attributed to past and current land use practices and watershed impacts. A 0.25-mile reach of Wilson Creek is scheduled for WDNR restoration work in 2012. This restoration reach is located immediately upstream (west) of Dunn County Road O, and travels through property owned by Dale and Linda Dahlke, who have granted an easement to WDNR for public fishing and stream restoration. Stream restoration work on the Dahlke easement will provide a cornerstone for additional future restoration projects on Wilson Creek (both upstream and downstream of the Dahlke easement), and on the North Branch of Wilson Creek.

Pre- and post-monitoring will help determine the effectiveness of Wilson Creek restoration work for improving aquatic habitat and stream temperature, thereby greatly enhancing trout populations, but also providing resilience to climate change. Dale Dahlke, the property owner and a Trout Unlimited volunteer from the Clear Waters Chapter based in Eau Claire, Wisconsin, is conducting the Wilson Creek monitoring work, including pre- and post-restoration monitoring of stream temperature, air temperature, and habitat conditions. Protocols for conducting pre- and post-monitoring of stream restoration projects were developed by Trout Unlimited Driftless Area Restoration Effort (TUDARE) and WDNR staff, as a part of this grant (Hastings, Johnson, and Mitro, September 2011).

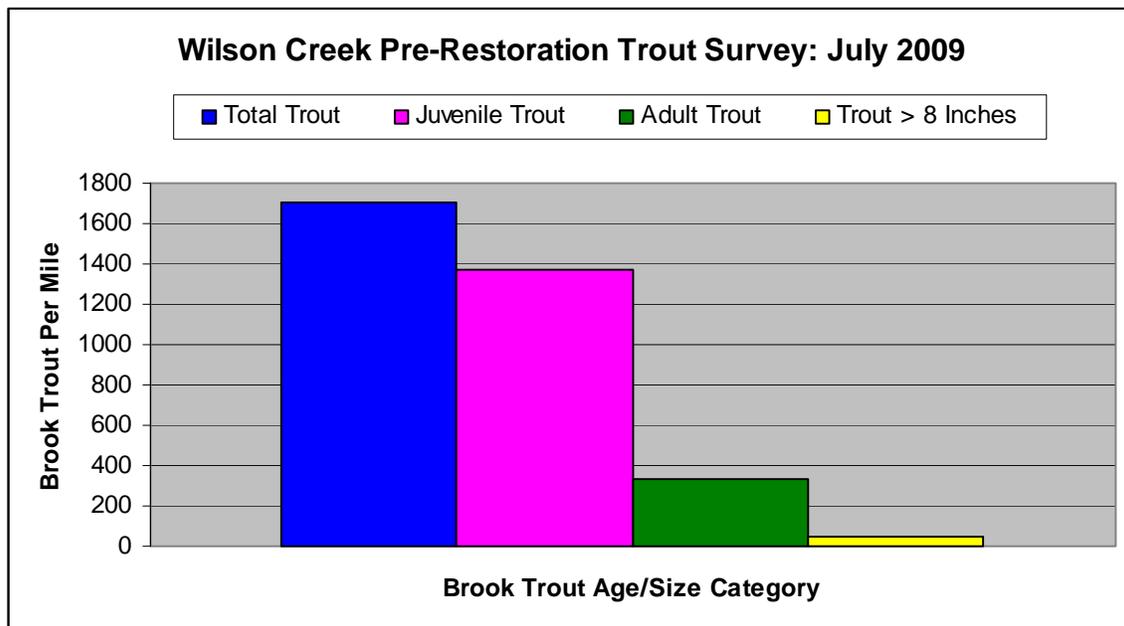
In June 2011, Dale Dahlke, with the assistance of Trout Unlimited volunteer Kent Johnson (Kiap-TU-Wish Chapter), established continuous stream temperature monitoring sites at three locations in the Wilson Creek restoration reach (see project map below). Dale also established a weather station on his property, for continuous measurement of air temperature, relative humidity, and dew point (see project map below). Pre-restoration monitoring of stream and air temperature has been conducted since July 2011. In spring 2012 (prior to the start of stream restoration work), Dale and Kent Johnson will conduct a pre-restoration assessment of Wilson Creek habitat conditions (stream width, water depth, water velocity, and canopy cover) at multiple transect locations situated throughout the Wilson Creek restoration reach.

After the Wilson Creek restoration work is complete in 2012, post-restoration monitoring will be conducted to document improvements in stream temperature and habitat conditions.

WDNR staff are conducting pre- and post-restoration monitoring of trout populations in Wilson Creek, to assess the biotic response to improved habitat and temperature conditions. A recent (July 2009) pre-restoration trout survey conducted by WDNR on the Dahlke easement (Station 8B) indicated a brook trout population of 1,703 fish per mile, with 1,374 fish per mile (81%) being juveniles (<4.6 inches) and 329 fish per mile (19%) being adults (≥ 4.6 inches). The population of “legal” brook trout (≥ 8 inches; those able to be kept by fishermen) was 52 fish per mile (3%). The 2009 pre-restoration trout survey results are depicted below.



WILSON CREEK
Station 8B
Dahlke Fishing Easement
Dunn County, Stanton Township
Section 27
Category 4 Trout Fishing Regulation
Class I Trout Stream



Wilson Creek Stream Restoration Project Knapp, WI

Stream Monitoring Sites

(Funding provided by Wisconsin's Citizen-Based Monitoring Partnership Program)



Monitoring conducted by:

Dale Dahlke
Clear Waters Chapter
Trout Unlimited

