# Trout Unlimited
# MINNESOTA

The Official Publication of Minnesota Trout Unlimited - March 2013

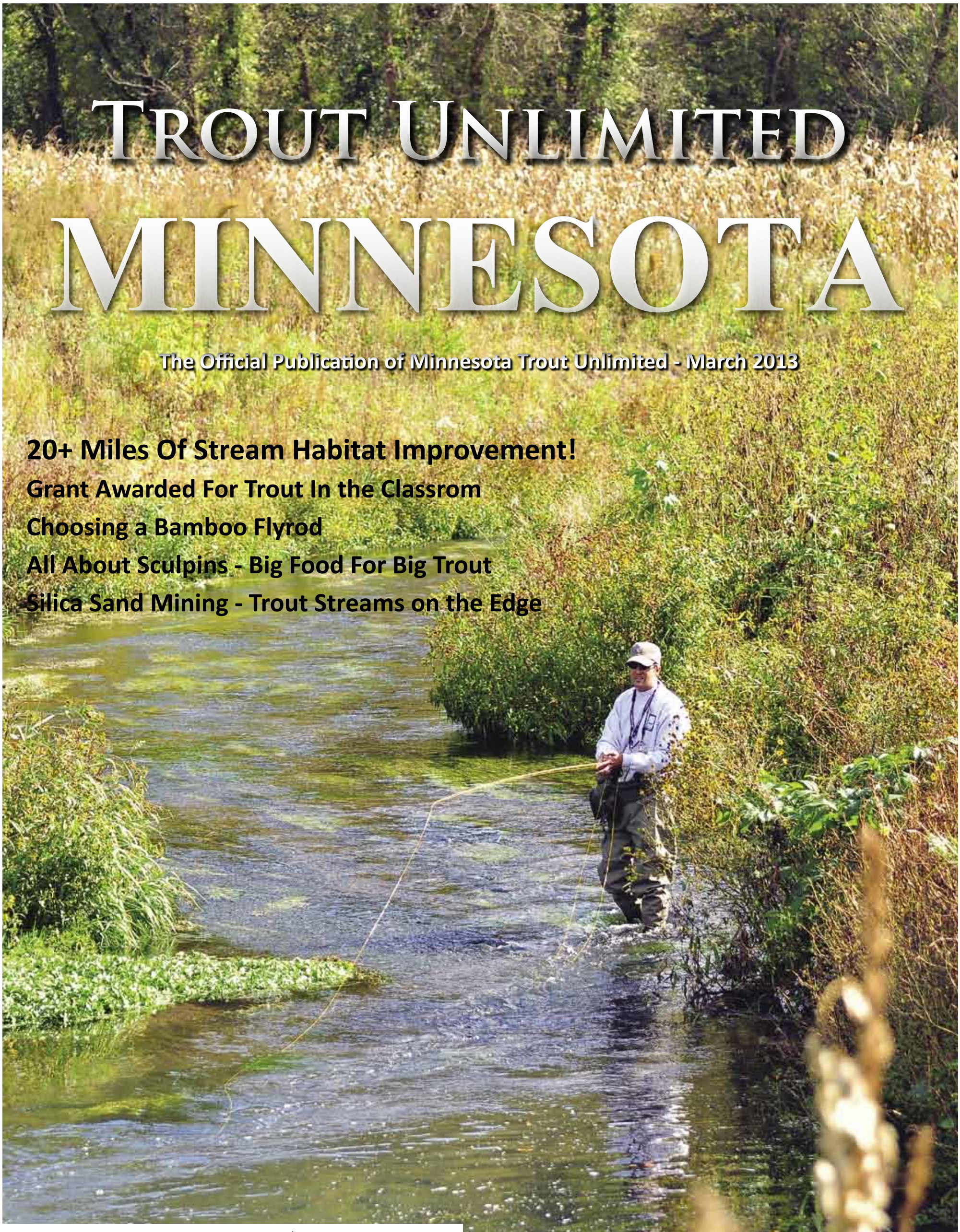
**20+ Miles Of Stream Habitat Improvement!**

**Grant Awarded For Trout In the Classrom**

**Choosing a Bamboo Flyrod**

**All About Sculpins - Big Food For Big Trout**

**Silica Sand Mining - Trout Streams on the Edge**





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# Trout Unlimited Minnesota

*The Voice of MNTU*


## On The Cover

An angler fishes a habitat improvement section of Hay Creek near Redwing, Minnesota.

Kevin Biegler photo

## In This Issue

- Find out everything you need to know about big SE MN brown trout's favorite food, the sculpin.
- Learn about the finer details of selecting a bamboo fly rod.
- Get ideas for the next book that you'll throw in your suitcase when you're travelling.
- Silica Sand Mining Update
- Updates on multiple youth and educational efftors around Minnesota.
- And Much More!

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Brook Trout from the Manitou River in NE MN

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# Editor's Angle

## It's Good To Be Back in Print

By Carl Haensel

As the editor for Trout Unlimited Minnesota, I am pleased to introduce a new, refreshed version of the statewide newsletter. I was fortunate to have written for the newsletter previously in the 1990s, and it is with great excitement that we are launching this renewed effort to bring information to our thousands of TU members across the state. Creating and maintaining a connection with our many members is the most important mission of this newsletter, and I hope that you will find the contents inside both useful and entertaining.

Page through to find out the details about habitat improvement projects, environmental issues and your local chapter news. You will also find informative articles on fishing, books, equipment, and natural history.

We welcome input from members on what they are interested in seeing in the newsletter, and contributions of content as well. Make sure to send us that photo of the big one that didn't get away, and we might just include it in the next issue.

This renewed newsletter effort would not be successful without our advertisers. Please take the time to support them, and make sure to mention that you saw their ad in the newsletter!

# Minnesota Council Update

## Planning For Success

By JP Little, Minnesota Council Chair

Greetings from the Minnesota Council and welcome to our new statewide newsletter. I want to thank Carl Haensel for agreeing to be the editor of a product that will help get the message of Trout Unlimited out more broadly across the state of Minnesota. I have personally been involved with the Minnesota Council for the last dozen years, the last two as chairman. We have a pretty darn good story to tell, as you will see in the rest of the newsletter.

First and foremost, the amount of habitat improvement that is active in the state is absolutely amazing. As a result of grants recommended by the Lessard-Sams Outdoor Heritage Council and appropriated by the Minnesota Legislature since 2009, we have been able to tackle improving 20+ miles of streams across the state. This 25 year, taxpayer approved opportunity requires annual submissions through a very competitive proposal process which hopefully results in a grant covering direct project costs, which can be large ($2M+ annually). Working closely with the DNR and TU Chapters across the state we have many projects in flight that are dramatically improving streams and the quality of fishing. This effect is profound and generational – the last five years have had a bigger impact than the 25 years that came before. A key driver that has made this all come together was the creation of an Executive Director role three years ago that is staffed by John Lenczewski, a former chairman of MNTU. John's dedication in pursuing the "Lessard" (Outdoor Heritage Fund) grant money, and working closely with the teams "on the ground", is what is making this all happen. The "in kind" volunteer work being done by the chapters is also essential – none of this happens without great volunteers. I encourage everyone who reads this to get out and see firsthand the "state of the art" work that is being done to improve the streams of Minnesota, and don't forget your fishing pole.

The work of the state council is being guided by a 5 year strategic plan that was adopted in March of 2009. It will help us through 2013, but will be updated over the course of the year to reflect our priorities for 2014-2018. The Minnesota Council currently has 24 members, and has standing meetings during the winter, coinciding with the trout fishing opener in April, and coinciding with the last weekend of fishing each September. We also have ad hoc meetings as needed to address hot topics in between the standing meetings. A very hard working Grant Oversight Committee provides regular oversight of the OHF funded habitat projects. The heart of any great volunteer organization is its people. If you are not yet involved with the Minnesota Council or your local chapter please consider sharing your considerable skills to help us meet the challenges and opportunities in front of Trout Unlimited.

Tight Lines!

Hay Creek near Redwing, MN

# From The Executive Director

## We Need Your Volunteer Effort

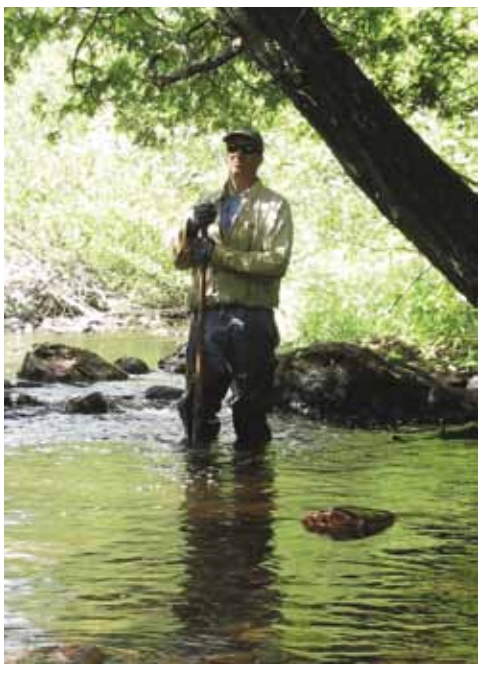
By John Lencewski, MNTU Executive Director

Reflecting back upon my 30 plus years as a member of Trout Unlimited, what stands out is the dedication of TU volunteers to protecting and improving our trout waters. The passion, knowledge and generosity of numerous Minnesota TUers guided me on my journey from young trout fishing fanatic to volunteer and committed conservationist. This newsletter highlights opportunities for you, regardless of where you are on your own journey, to volunteer a little of your time, talent or treasure to help improving our local trout waters

We hope that these articles exploring conservation issues facing Minnesota will provide you the knowledge to be able to speak with confidence to friends, neighbors and others to help ensure the long term preservation of our trout fisheries.

We need your involvement to continue Minnesota Trout Unlimited's place as the robust volunteer organization we are today. If you do not receive email alerts regarding statewide conservation issues, visit our state web site at www.mntu.org and sign up for our online newsletter. You will have the opportunity for timely involvement in statewide issues ranging from steelhead management to silica sand mining.

Consider getting involved in your local TU chapter by contacting your chapter president, listed in the column to the right. There are ongoing efforts in all areas that need additional volunteer effort, including youth education, habitat improvement and chapter organization. Every volunteer is both needed and greatly appreciated. We can not do the job without your involvement. Read the Chapter News section of this publication to learn what is going on in your area, and get some ideas about how you might be able to get involved in this very rewarding work. I hope to see many of you on project sites this summer.



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# Trout Stream Habitat in Minnesota

## Repairing, Improving & Enhancing Minnesota's World-Class Trout Waters

By John Lencewski, MNTU Executive Director

A successfuly completed habitat improvement area along West Indian Creek

Habitat improvement projects have always been an important part of Minnesota Trout Unlimited's efforts to conserve, protect, restore and sustain Minnesota's coldwater fisheries. For four decades Minnesota TU members and chapters have been planning, funding and executing high quality fish habitat restoration and enhancement projects around Minnesota. Our recent partnership with Minnesota taxpayers, the Lessard-Sams Outdoor Heritage Council, and the Minnesota Legislature has dramatically increased the number and scope of our habitat enhancement and restoration projects.

In November 2008 Minnesota voters approved a constitutional amendment dedicating the proceeds of a new state sales tax to protecting, restoring and enhancing Minnesota's natural resources. In 2009 the Minnesota Council and leaders of local chapters utilized their project experience and strong partnerships with the MNDNR to develop an initial package of projects around the state. We also pooled our scant financial resources to hire an executive director to help Minnesota Trout Unlimited secure funding from the state's Outdoor Heritage Fund in each of the first four funding cycles.

In the past four years we have secured $7 million for habitat projects across Minnesota - from northwestern Minnesota to Lake Superior, the Twin Cities and southeast Minnesota. Grassroots leaders and volunteers are utilizing this funding to ensure that, by the next generation, robust populations of native and wild salmonids will thrive in Minnesota's coldwater streams, rivers and lakes, so that our children can enjoy healthy fisheries close to their homes. Forty separate projects have been funded, including 23 in the Driftless area, 7 in the Lake Superior basin, and 11 others across the state. Chapter and Council leaders and volunteers, working with the MNDNR and other partners, have already steered 22 projects to completion.

Before: A typical eroding streambabank

After: Banks stabilized and resloped

## Goals and Scope of work

Each project aims to increase the carrying capacity and trout population of the stream, increase angling access and participation, improve water quality and provide other benefits to aquatic and terrestrial wildlife. In consultation the MNDNR, Minnesota TU uses the best available stream restoration and coldwater aquatic science to select specific habitat improvement methods for each stream that reflect the distinct characteristics of the watershed and ecological region, address the specific limiting factors (e.g. spawning substrate, adult or juvenile cover, invertebrate production), and account for the land use practices. Projects typically accomplish these objectives:

- Increase adult trout abundance
- Reduce stream bank erosion and associated sedimentation downstream
- Reconnect streams to their floodplains to reduce negative impacts from severe flooding.
- Increase natural reproduction of trout and other aquatic organisms.
- Increase habitat for invertebrates and non-game species.
- Improve angler access and participation.
- Improve water quality
- Protect productive trout waters from invasive species.

## Project Methods

While habitat enhancement methods vary from site to site, some of the options that are used around Minnesota typically include:

- Sloping stream banks back to both remove streamside sediments that have previously been transported from uplands areas and better reconnect the stream to its floodplain.
- Removing shallow rooted woody vegetation (invasive box elder, buckthorn, etc.) to enable removal of accumulated sediments, reduce competition with desirable plant and grass species, and allow beneficial energy inputs (sunlight) to reach the streams.
- Stabilizing eroding stream banks using vegetation and/or rock.
- Installing overhead bank and other in-stream cover for trout.
- Installing soil erosion prevention measures.
- Seeding exposed banks and taking steps to firmly establish vegetation (including using native prairie grasses where appropriate and feasible).
- Improving angling access.
- Fencing riparian corridors where appropriate to facilitate managed grazing and prevent damage from over-grazing.
- Restoring large cover logs to the channels of Northern forested streams to increase deep pool habitat.
- Planting long lived trees along Northern forested streams to shade and cool the water, and eventually become large cover logs.

## Southeast "Driftless Area" Projects

In this agricultural area erosion has led to wider, shallower and warmer streams, and left a legacy of excessive streamside sediments which continually re-erode and cover in-stream habitat. To remedy this, invasive trees are removed and steep, eroding banks are graded by machinery to remove sediments deposited here from upland areas. Streams are reconnected to their floodplains.

A typical MNTU stream habitat project grades these eroding banks back to a 3 to 1 slope and anchors the toe to curb erosion. Banks are then seeded with grasses to secure soils within the entire corridor and keep them from eroding in high water. The sloped banks allow floodwaters to spread out into the floodplain and slow down, reducing the destructive impact of a flood. Because MNTU habitat projects are designed for long-term ecological and hydraulic stability, flood waters typically just flatten grasses temporarily and do not damage the in-stream structure and undercut banks the structures create.

Overhead cover habitat is created by increasing the stream's depth via narrowing the channel or installing rock weir plunge pools, and by installing overhead cover structures in select stream banks. Wooden structures are often installed into banks in hydraulically suitable locations and reinforced with local rock as a way to restore or recreate the undercut banks which had existed before settlement and land use practices altered the more stable flows which had gradually created and maintained them.

CLEAN WATER LAND & LEGACY AMENDMENT

Legacy funding has provided MNTU with 7 million dollars of funding over the past four years

## Northern Forest Projects

Streams in northern forested areas have very different conditions from southern streams and aquatic habitats here have been degraded in different ways. Early logging activities removed logjams, large woody cover logs and boulders from stream channels and altered their hydrology. Enhancement and restoration methods typically involve directly increasing the amount of in-stream cover habitat by restoring large logs to the stream channel and placing rocks to direct low summer and winter flows to cover logs, or to scour deeper pools.

Trout streams in northeast Minnesota, unlike those in the southeast, typically lack significant groundwater flows and are kept cold by the shade provided by trees along their banks. Due to human alterations of their watersheds many or most these streams now experience unnaturally high water temperatures in the summer. Planting is done to restore tree canopy and reduce summer water temperatures. Additional long term benefits include stabilizing stream channels, curbing erosion and sedimentation, providing leaf litter for aquatic invertebrates (trout prey), and providing a source of future in-stream woody cover habitat. Because the rugged North Shore geology makes controlling competing vegetation difficult, matting is used to keep weed growth down, and larger trees caged to inhibit substantial deer browsing losses.

Logs being placed and anchored into bank

Caging in high deer browse areas

Rock weir creating deep scour pool

## Outcomes

These actions directly enhance physical habitat, and typically increase overall trout abundance, the number of larger trout, and levels of successful natural reproduction. Additional benefits, that extend many miles downstream from the project, include reduced erosion and sedimentation, cooler water temperatures, and improved water quality. By creating productive fisheries in visible and accessible areas, we also hope to increase citizens' use of our coldwater ecosystems, tangibly re-connect Minnesotans to the land and water, foster understanding of threats to them, and motivate citizens to advocate for watershed and water quality improvements. We continue to develop partnership with local landowners, rural communities, and local civic and sporting organizations. Landowners typically become very enthusiastic partners, working side-by-side with local TU volunteers, donating materials, and even securing farm bill and other conservation funding for use on projects.

A wild brown trout caught from a habitat improvement project

# Grant Awarded For TIC

## Additional Trout In The Classrom Programming to Begin

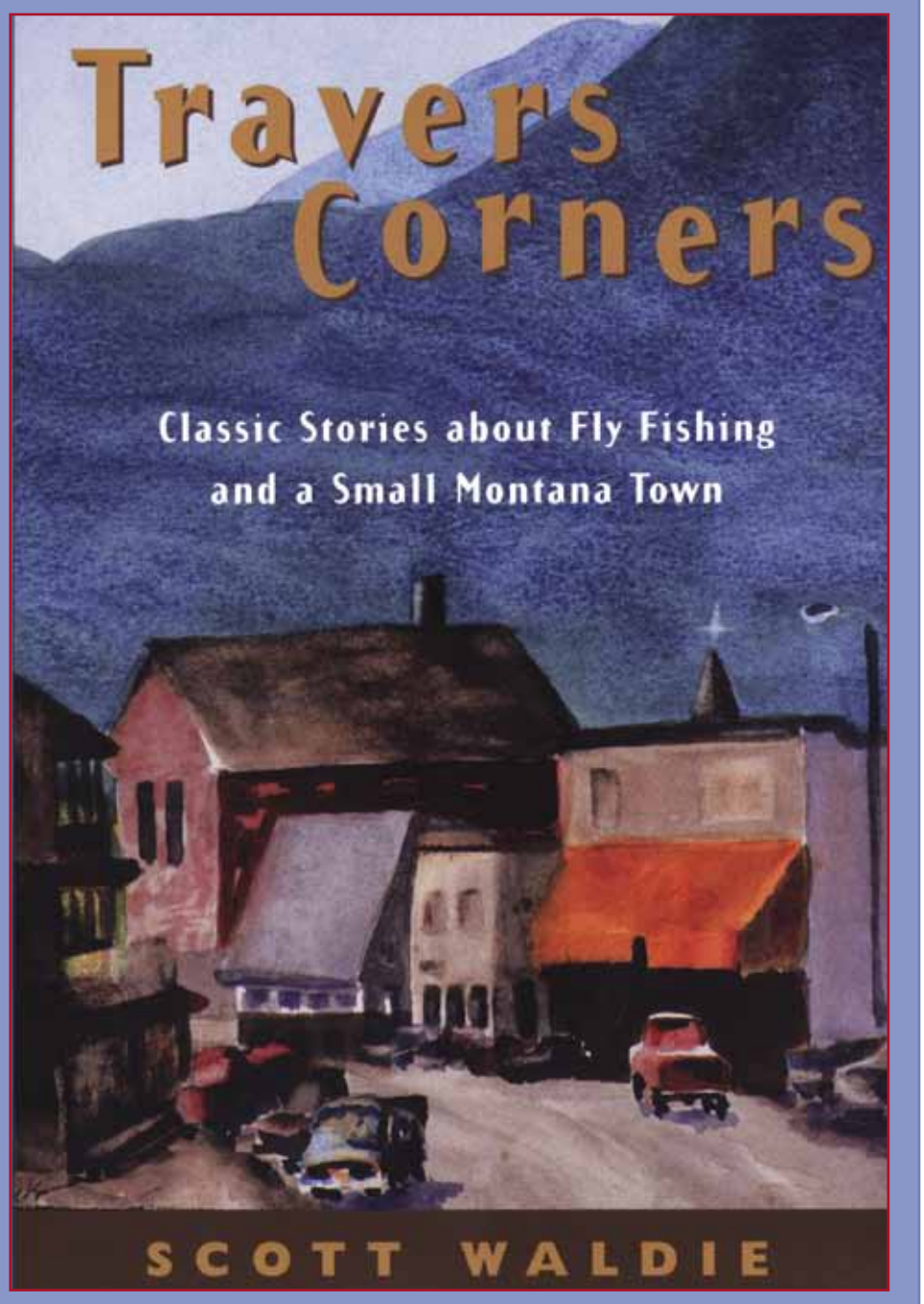
By Steve Young

Headwaters Chapter 642 was recently awarded a grant by the George W. Neilson Foundation for purchase of the equipment necessary to begin a second Trout in the Classroom ("TIC") project this fall. Our first project, also originally funded by the Neilson Foundation, is in its sixth year at Northern Elementary School near Bemidji. Although there are a number of TIC programs in other parts of the country, our chapter's project is still the only one in Minnesota.

We begin each year of the TIC program by acquiring eyed trout eggs from the Lanesboro DNR hatchery in the fall. They are then entrusted into the care of a fifth grade classroom that raises them through various life stages before live releasing them in the Clearwater River in May. Along the way the kids learn about fish biology and physiology, water quality, aquatic invertebrates, watersheds, fish management, careers in fisheries, aquatic invasives, and data collection (each week two students are assigned as "trout technicians" and are responsible for compiling data on mortality, temperature, ammonia levels, pH, etc.). We also take them on a field trip to the DNR hatchery near Emily, Minnesota, where they get to learn more about raising trout from the professionals there. We work closely with the Bemidji DNR Fisheries office, and their staff frequently give presentations to the students. Other outside speakers have included staff from the Minn. Dept. of Health and the Beltrami SWCD, as well as Janet Rith-Najarian (aquatic insects), and John Latimer (phenology). The students have been interviewed for radio, TV, and newspaper, and were featured in a special DNR video. View it online at www.dnr.state.mn.us/vnr/trout.html








# Travers Corners

## Book Review

By John Hunt

A good book, especially one that involves fishing, can draw the reader into the plot, making them feel almost a participant in the story line. So it is with the "Travers Corners" series by Scott Waldie. From the introduction to life in a small Montana in the opener entitled "Travers Corners", continuing through a deeper look at the lives of town residents in "Return to Travers Corners", and culminating in "Travers Corners: The Final Chapters", Waldie provides a look at relationships and that is at times nostalgic, humorous, wistful and even melancholy.

The books are more accurately called a collection of stories, all related, but not necessarily sequential. Starting with a brief look back at the town's founding in the 1870's by ancestors of today's residents, we quickly learn the names of the primary players in this story. Judson "Jud" Clark, Berkeley dropout, driftboat builder, and fly-fishing guide extraordinaire. Jud's dog, Annie the Wonderlab. Junior McCracken, owner of the general store and town pharmacist. Doc Higgins, who came for the work and stayed for the fishing. Sarah Easterly and her uncle Sal, escapees from a New York tragedy and proprietors of the Tin Cup Bar and Café. Henry Albie, Jud's best friend and general jack-of-all-trades. Dolores, Henry's high school sweetheart, ex-wife, and current significant other.

Author Scott Waldie's writing skill is first class. He adds warmth and charm to the everyday buzz along Main Street in a town defined by the river and mountains of the Elkheart valley. He gives us glimpses of Jud's fishing clientele, both the good and the bad. We get stories of the ones that got away, and the ones that didn't (and not just fish). We learn of love and loss, all told within the context of characters that are thoroughly enjoyable. With chapter titles such as "Word Gets Around", "Heaven is a River", "Rose's Ragtop", "It Ain't Over till the Fat Man Sings", and "No Fishing Aloud", the reader is given a window into the characters' lives from all sides, both the mundane and the quirky.

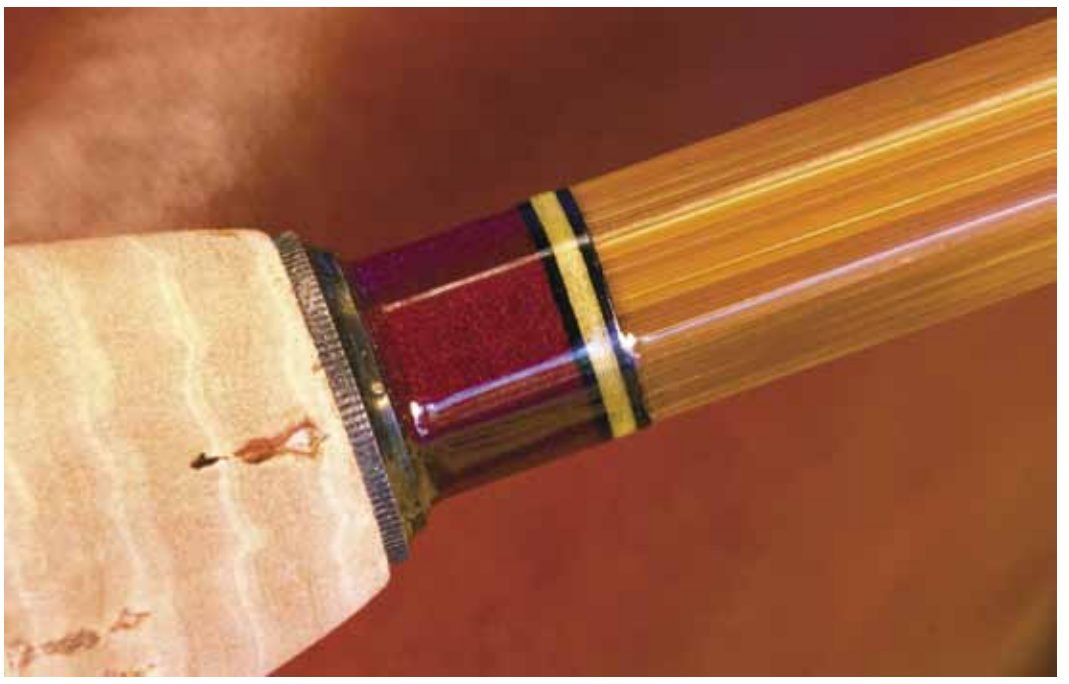
The classic fly-fishing story "The River Why" by David James Duncan was recently made into a movie and it's a shame that author Scott Waldie passed away about 5 years ago. I can only imagine how Travers Corners might also have been brought to life on the screen had Waldie lived to pursue such a project.

# Choosing A Bamboo Flyrod

## Observing Details in the Art of Rod Construction

By Larry Donahe

If you are in the market for a new bamboo fly rod, do you know what to look for before making the investment? There are many things to consider before spending $1000 or more for a bamboo rod that, with proper care, should be able to be passed down to your children and your children's children. What I find as a maker of bamboo rods when I am at fly fishing shows is that the majority of the people who pass by my table never get beyond the varnish. And what I mean by that is most people get caught up in the shiny, smooth finish on the bamboo and fail to look for any potential construction flaws. Flaws, if any, are the result of poor craftsmanship and the result of using a natural material like bamboo. Most people take a glance down the rod and are amazed at how someone can plane down six strips of bamboo and glue them back together into such a small diameter. Some people will at least check the rod to see if it is straight, but that is usually where it stops. Very few people will actually look for things like glue lines and poor wraps and a very select few will feel the rod for the balance and flex (taper).



Detail of the winding check on Paul Young 'Perfectionist' rod wrapped in cardinal and tipped in Black.

The best way to judge the workmanship of the maker is to check the entire rod, or at least a good portion of it, for glue lines. For a typical hexagon rod there are six individual strips that are split from an individual culm of bamboo and then hand planned down based on a given taper and then glued back together. There are a number of steps in that process that if not done correctly will result in a visible glue line in the finished bamboo rod. The most common mistake a maker can make is using a dull blade in their hand plane, which results in tearing or chipping of the fibers of the bamboo, typically around the node. Another common problem is the glue up process that can turn an otherwise enjoyable time in the shop to a very stressful afternoon and glue lines.

Another great way to see how much time, effort and skill was taken when making the rod is to closely exam the silk wraps that hold the guides onto the bamboo. When looking at the wraps, each wrap should be perpendicular to the bamboo and each wrap should also be tight against the next wrap. There should be absolutely no spaces or gaps anywhere in the wrap. Each wrap should start and stop at the same point on the guide foot. And as you progress down the rod towards the tip the wraps should be getting progressively smaller as the guides get smaller. There should be balance and symmetry. If you were to set both tips next to each other all wraps should line up, each wrap should start and finish at the same place on the rod.

Close-up of the stripping guide on a Paul Young 'Perfectionist' rod.

Lastly, take a closer look at the varnish on the rod, and instead of looking through the varnish to see any potential flaws, look at the surface. Hold it up to the light and look down the rod blank checking for any waves, specs and flatness. Waves are typically the result of pulling the rod out of the varnish too fast and with a jerking motion. Specks are from an unclean dipping area and poor finishing techniques. While the flatness comes from putting many thin coats of varnish on instead of only a few heavy coats. The varnish should maintain the crisp lines of the hexagon shape. It should not look cupped or bowed. Look closely at the wraps, are there waves or bumps? The varnish on the flats and the wraps should be dead flat.

If there are no glue lines, spaces in the wraps and the varnish is dead flat your well along the path to finding a rod maker that is proficient in making a quality bamboo rod. Be sure, however, to ask the maker if it is okay to pick the rod up to exam it. I invite people to take a closer look at my rods, but it is nice to be asked before someone starts putting my rods to the test. Good luck on your search for a bamboo rod and I hope to see you at the next fly fishing show.


The butt section and 2 tips of a Paul Young 'Perfectionist' rod wrapped in cardinal and tipped in black.

# News from TU National

## The National Leadership Council

By Steve Carlton

What is the National Leadership Council? What do we do and how does it affect Minnesota?
The National Leadership Council (NLC) is the volunteer body that sets the direction of TU and is made up of one representative elected from each state council. The NLC has three purposes: First, it establishes the national conservation agenda. Second, it facilitates and implements this agenda. Third, it builds the organizational capacity of TU's Board of Trustees (BOT) that guides the organization's business operations. The Board of Trustees (BOT) meet in person three times a year to review and approve financial and organizational decisions.

As the NLC representative for Minnesota, I act as the liaison between TU National (TUNA) and the Minnesota Council (MNTU) and its chapters. The national conservation agenda and Critical Focus Areas (CFA) are the priority issues that face Trout Unlimited and the watersheds that we are trying to protect. Every year at the national meeting the members of the NLC meet to discuss which issues, problems or watersheds need to be focused on.
The National Conservation Agenda approved by the NLC on September 19th, 2012 included the following:

**Protect:**
- Native trout and salmon watersheds
- Stream habitat and riparian zones
- Wild trout and other salmonids
- Outstanding trout waters on public and private lands
- Coldwater aquifers/groundwater
- From the impacts of climate change
- From pollution from energy development, mining, agricultural run-off, acid deposition, and other sources
- Against invasive species including inappropriate stocking of hatchery salmonids

**Reconnect:**
- Headwater tributaries to mainstreams
- Removal of dams, culverts and obstructions that impede salmonid migrations
- Water diversions

**Restore:**
- Atlantic and Pacific salmon
- Native and wild trout
- Riparian habitat, in-stream flows & water quality

**Sustain:**
- Trout and salmon fisheries through land conservancy
- Education and membership development

The 2012 Critical Focus Areas Include:

- The proposed Pebble Mine in Alaska
- Yellowstone National Park native fish conservation
- Gas & oil development including, but not limited to, withdrawal, distribution, sand mining, and waste management.
- Upper Colorado water withdrawal
- Clean Water Act
- State & federal natural resource funding
- Good samaritan fix via legislation or administration
- Hard rock mining in MN and WI

The Minnesota Council successfully lobbied to have silica sand mining in Southeast Minnesota added to the priority list of TU's Critical Focus Area. Minnesota and Wisconsin have been the target of energy companies that use this special sand for hydro-fracturing (Fracking) oil and natural gas wells. The mining and processing of this "frac sand" in Wisconsin has been devastating. Over 90 new mines have been established, along with large processing and transportation facilities. Water and air have been polluted, rural communities devastated and thousands of people negatively impacted. This industrial-scale silica sand mining is substantially different from the aggregate mining that has long taken place in the SE part of Minnesota. In addition to removing the sand, the industrial process also takes an enormous amount of water to wash this sand prior to shipping it. That water would be pulled from the aquifers that feed our trout streams. The frac sand industry poses a real threat to the area's natural resources, and road and bridge infrastructure also. Dust from these mines on a windy day can coat your car, your windows, your lawn furiture and can be a significant health hazard. While Wisconsin has been riddled by sand mines, Minnesota has been slow to permit these mines. MNTU has been at the forefront protecting our streams and our groundwater from the effects of sand mines.

The health concerns of silica sand mining are also at the forefront of this debate. Minnesota Health Commissioner Dr. Edward Ehlinger said South East Minnesota's unique Karst geology is especially prone to infiltration of contaminants that could end up in our drinking water. Mining operations would remove the natural cover material that acts as a filter for the aquifer, he said, and plans for backfilling and reclamation would leave less cover. Ehlinger also said Minnesota has "little to no information" on the levels of respirable silica generated by frac sand mining or processing. He said the toxicity of crystalline silica to humans has been well documented in occupational settings, with studies showing it can cause a number of lung diseases, including silicosis.

MNTU also convinced TU national to add sulfide mining in the Lake Superior basin as a Critical Focus area, which threaten native brook and lake trout, as well as wild steelhead and salmon.
For further information on this type of mining and its negative impact on our natural resources, look up the Flambeau Mine in Ladysmith, WI. TU has been attempting to fix the effects of these types of mines all over the country for many years. These problems just don't go away after the mines are shut down. It takes a lot of clean-up and many years to restore streams near polluted mines. The cost of clean-up rarely ever comes from the former mine owner.

MNTU will be asking for your voice in the near future to help protect our natural resources and our cold water fisheries. This issue won't go away soon. It seemed like SE Minnesota dodged a bullet from the effects of ethanol plants a few years ago, and now we have an even bigger threat. Watch these newsletters, the MNTU website and your local chapter website for more information and how you can get involved.

# Sign Up For T.U.N.E Camp!

## A Great Opportunity for Youth In SE MN

Trout Unlimted is excited to announce that there will be another season of T.U.N.E. Camp this year in June. It again will be held June 21st-23rd at Eagle Bluff Environmental Learning Center in Lanesboro, MN. It is a great opportunity for youth in grades 6-12 to have an amazing outdoor experience and learn to flyfish, paddle, shoot, and much, much more.

Visit www.mntu.org to download a copy of the registration form.

Catching trout on Trout Run During T.U.N.E. camp

A TU volunteer teaching flyfishing at T.U.N.E. camp

# Silica Sand Mining

## Danger on the Horizon in Minnesota's Driftless

By john Lencewski, MNTU Executive Director

Clean, cold water. Without it Minnesota trout fisheries will disappear. Water quality is the overriding need of coldwater fisheries. Most of you have undoubtedly heard of silica sand or "frac sand" and the growing chorus of concern over the potential impacts which mining and processing this sand may have. Because silica sand mining and processing activities in southeast Minnesota threatens to disrupt the flow of clean, cold groundwater to springs and trout streams, Minnesota Trout Unlimited members and leaders are voicing strong concerns. In this article we provide an overview of basic facts essential for understanding the threats, the inadequacies of current law, and what laws are needed to prevent the needless destruction of these treasured spring creeks of the Driftless area. We also hope to give you the knowledge to be able to speak with friends, neighbors, agency heads, and elected officials to ensure that the public debate around this issue will result in the long term preservation of our trout fisheries.

## MNTU Involvement

We are actively involved in the public debate on this issue because a steady supply of cold groundwater is a prerequisite for trout fisheries to exist in southern Minnesota. While members, chapters, the Minnesota Council, and the State of Minnesota continue to invest thousands of hours and millions of dollars to restore physical habitat for trout and other coldwater aquatic species, all of this will be for naught if groundwater inputs into these streams is disrupted by mining or processing activities. Just 6% of Minnesota's streams and rivers can still support coldwater species. We cannot afford to allow a few individuals or companies to effectively destroy the most fertile ones in the state, and leave them "fit" only for chubs and suckers. Widespread mining and processing of silica sand in ecologically unique area could seriously disrupt and diminish the natural flow of this vital groundwater. However, we do not believe that such damage is inevitable. To the contrary, we have consistently expressed our brief that there are many areas where silica sand mining can be mined, and even processed, provided that the state sets truly appropriate/adequate restrictions on the locations and methods of these activities. But this will require putting a few basic protections into state law.

## Groundwater 101

Groundwater is water which has seeped into the ground from the surface, over a period of days, months, years or even centuries. In the karst limestone area of southeast Minnesota it even flows as underground streams in some locations. Water that is between confining layers of rock or clay, forming underground reservoirs of clean water are often referred to as "aquifers". The water in some aquifers can be decades or even centuries old. Some of this water flows out through cracks in the confining bedrock in natural springs and seepage areas or "seeps". Due to the cooling effect of the earth it emerges at consistently cold temperatures year round. This cold, clean water is the lifeblood of our trout streams. It is no coincidence that these streams are referred to as spring creeks. The area that feeds a spring or seep is called a "springshed". A springshed is much like a "watershed", but is underground. It is the area underground from which groundwater flows to charge or recharge aquifers which supply the water which issues from a given spring or seep. This area can be significantly different from the watershed area.

### Why You Need to Be Concerned

Clean, cold groundwater is the lifeblood of southeast Minnesota trout streams. The steady supply of clean, cold groundwater issuing from natural springs in these picturesque valleys is what creates our productive fisheries and draws anglers from across Minnesota, the region and the country.

Depending upon where and how silica sand mining and processing are carried out, these activities could disrupt and diminish groundwater flows from springs, with serious consequences for trout streams and anglers. However, if restricted to appropriate locations and methods the impacts for water resources could be relatively modest.

**Visit www.mntu.org to get involved.**

**SE streams need your help!**

Trout streams are entirely dependent upon groundwater. Without the stable base flow of cold groundwater during the summer Minnesota trout streams will disappear! No cold groundwater, no trout stream. It is that simple.

## How Silica Sand Mining Could Harm Our Trout Streams

**Basics of Silica Sand Mining**

Silica sand or "frac sand" is sand which is composed almost entirely of pure quartz. While silica sand has been mined on a small scale for glass making and other uses for 100 years or more, recently there has been a sharp increase in demand for use in shale oil and gas development. An extraction method called hydraulic fracturing (or "fracking") is used to produce oil and gas from bedrock, and each fracking well can use ten thousand tons or more of silica sand. This increased demand for silica sand is driving what is sometime described as a new "gold rush" to develop more and larger mines in southeast Minnesota and southern Wisconsin.

Hydraulic fracturing is a method used to increase the production of oil and gas wells. The process injects a mixture of "proppant" (usually frac sand), water, and chemicals into a well under very high pressures. Fluid pressure fractures the rock and opens fractures and pores that would normally be closed due to the weight of the rock above. The sand grains are carried into these fractures and prop them open after the fluid pressure is released. This allows increased flow of oils and gas from these propped open fissures. No fracking for oil or gas takes place in Minnesota.

The fracking industry is after silica sand with preferred grain sizes. The concentration of these preferred grain sizes varies by the sandstone formation (St. Peter Sandstone, Jordan Sandstone, etc.) and by the particular layers within each sandstone formation. Think of the area underlying southeast Minnesota as a huge layer cake with alternating layers of more or less permeable rock, sand and clay. Groundwater is more or less trapped in the porous layers (sandstone) located between confining layers of limestone, but leaks through fissures and discharges as springs. The Jordan Sandstone formation happens to be the largest "sponge' which holds the Jordan Aquifer – arguably the most important source of groundwater supplying our trout streams.

**Mining Below The Water Table Depletes Groundwater**

Currently the State does not prohibit mining or quarrying sand below the water table. If an individual landowner or company elects to mine sand below the water table (the level corresponding to the top of the uppermost layer of groundwater in an area) then the operation would need to "dewater' the surrounding area. This might seem like an innocuous enough term, but what is involved is sucking out all of the groundwater from a large area surrounding the mine site. All groundwater is pulled from a large "cone of depression" in the surrounding aquifer and discharged overland to surface waters – but much warmer and potentially laden with fine silt, sediments and any chemical used in the operations.

MNTU continues to press for a state law prohibiting the mining or quarrying for silica sand within 25 feet of the water table in the 6 key counties in southeast Minnesota (the driftless area). Fillmore County enacted such a ban, but this is just one county. This is one common sense element of a protective set of regulations which the State can enact without needless study or delay. Geologists have suggested to us that the ban extend to 25 feet above the water table to account for annual swings in water levels.

**Wasting Groundwater to Sort Sand**

The fracking industry prefers to use certain sized grains of sand. Individuals and companies looking to make money of a given parcel of land appear willing to mine large deposits of sand with low concentrations of the appropriate sized grains because they know that the MNDNR will give them free reign to waste vast amounts of groundwater in the sand sorting process. If the state did not act as though our groundwater were limitless and essentially give it away ($140 for 50,000,000 gallons!), companies would use alternative approaches, while still making healthy profits.

"Washing" of sand does remove fine silt, but operations are really using water to sort the grain sizes. For example, only the upper 15 to 20 feet of the St. Peter sandstone formation located at the surface in exposed knobs close to Interstate 90 in Saratoga Township has a high concentration of preferred grain sizes. Below that level the concentration drops to as low as 25 percent of the sand deposit. Because the State of Minnesota essentially gives away its finite reserves of groundwater, individuals are encouraged to adopt methods which needlessly waste groundwater. For example, one operation in this area proposes to mine just the top 15-20 feet of the sandstone, and has little need to sort sand or waste groundwater doing so. Others, knowing Minnesota in practice treats its groundwater as limitless and valueless, appear willing to excavate far deeper pits and process very low grade sand. These later operations could operate very profitably as will the first, but because the state has created an incentive to use our groundwater is such wasteful ways, they are happy to do so. The state must end this subsidy of "free" groundwater.

One county, Fillmore County, has in effect prohibited this poor practice by prohibiting all washing, sorting or processing of sand at the mining site. The State should protect the public's water in all southeast counties by enacting such a protective regulation in all six counties.

**Ban On Groundwater Use Must Be Regardless Of Location**

While operators might prefer to sort or process sand on-site using groundwater, MNTU is very concerned that the MNDNR will issue groundwater appropriation permits allowing water from these same aquifers to be pumped out at nearby processing facilities. There are sources of warm surface water and even wastewater available to the industry, but state law has created a disincentive for businesses to use it. Why bother doing thoughtful planning if the State will let you drill a high capacity well anywhere you want? The industry has viable, profitable alternatives which would not endanger aquifers and coldwater ecosystems. It is time the State remove the current disincentive and set a clear public policy in favor of protecting our groundwater reserves.

**How Mines Can Disrupt Groundwater Flow**

Even mines or quarries which stay above the water table can nonetheless disrupt the hydrology of an area and

Silica Sand
Continued on Page 13

# The Slimy Sculpin In Minnesota

## Ecology, Life History and Reintroductions

By Neal Mundahl, Department of Biology, Winona State University

Sculpin are ugly fish. Big head, bulging eyes, gaping mouth surrounded by big lips, massive pectoral fins, skinny body. If they don't win the "Ugly Fish Award", at least they make the podium.

Despite their looks, trout anglers have long known that sculpin can be important prey for big trout and salmon. Way back in 1937, the slimy sculpin was the inspiration for Minnesota fisherman and tackle entrepreneur Don Gapen to develop the muddler minnow to catch big brook trout at his resort in Ontario. The muddler now is used worldwide in many variations because of its universal appeal to game fish, but it still is mostly prized for catching big trout and salmon. What trout angler doesn't have several variations of the muddler in their fly-fishing arsenal?

Large adult slimy sculpin from Cold Spring Brook near Zumbro Falls, Minnesota. Sculpin from this stream were used to stock other streams in southeastern Minnesota.

Minnesota is home to four species of sculpin: slimy, mottled, spoonhead, and deepwater. The latter two are mostly found in deep, coldwater lakes such as Lake Superior and are seldom, if ever, seen by most people. But slimy and mottled sculpins live in coldwater streams where they often can be seen darting across the bottom in search of new hiding places among the rocks and vegetation. In many trout streams, sculpin are by far the most abundant fish present. It's in these streams where sculpin interact with trout.

In 2003, the Minnesota DNR introduced its plan to reestablish slimy sculpin in several trout streams in southeastern Minnesota. The plan is located at http://files.dnr.state.mn.us/areas/fisheries/lakecity/semn_sculpin_reintroplan.pdf

While the trout angling community understood the rationale for the reintroductions, many others in the state wondered why the Minnesota DNR was spending precious fisheries management dollars to stock ugly, nongame fish into its prized trout streams. Why not spend the money directly on the trout? But Wisconsin fish biologists had succeeded with a sculpin reintroduction back in the 1970s, reestablishing a native species while providing additional forage to help trout grow bigger. Win-win!

Biologists with the Minnesota DNR sculpin reintroduction program had to locate and study potential donor populations of slimy sculpin in southeastern Minnesota, since sculpin are not raised in any hatchery in Minnesota or elsewhere. Once chosen, fish from each of the three donor streams were tested annually for 4 or 5 years to make certain that they were free of any disease, a requirement for any fish to be stocked into Minnesota waters.

Microscopic view of food organisms removed from a large adult sculpin collected from the South Branch of the Whitewater River near Elba, Minnesota. Amphipods (or scuds) and snails were the most common prey consumed by this fish.

Sculpin reintroductions began in 2003, with 10 streams having been stocked to date. Each recipient stream received fish from all three donor streams, 50 fish from each stream, for two consecutive years, an attempt to maximize the genetic diversity of the introduced populations. Follow-up surveys have indicated that sculpin were successfully reestablished and reproducing in six streams, unsuccessful in only one, and status was still to be determined in the remaining three.

The sculpin reintroduction program in Minnesota initiated additional research on sculpin in southeastern Minnesota, conducted by biologists from the University of Minnesota, Saint Mary's University of Minnesota, and Winona State University. These biologists have studied sculpin genetics, spawning behavior, habitat preferences, and diets. Through these studies, we have learned a lot more about a species of fish that previously had been mostly neglected in our region.

Sculpins feed on a wide variety of prey, normally bottom-dwelling invertebrates. Biologists at Winona State have documented slimy sculpin feeding on 35 different kinds of prey, from ants and beetles to mayflies, caddisflies, snails, and various small crustaceans. This agrees with what U of M biologists previously have observed in streams elsewhere in Minnesota. Most sculpin appear to prefer fly larvae (such as midges) and amphipods (scuds). Young sculpin feed almost exclusively on midge larvae, whereas older fish include more large prey in their diets. Studies in other parts of the country have reported that sculpin are primarily nocturnal feeders, locating their prey by sensing the weak electrical fields produced by the contracting muscles of moving prey.

Winona State researchers also found that adult sculpin prefer to spend most of their time under the cover of rocks or vegetation on the stream bottom or along deep banks. Younger fish were usually found in gravel or small rocks in shallower water. The maximum life expectancy for sculpin in southeastern Minnesota is probably 4 or 5 years, with most populations dominated by 1- or 2-year-old fish. Biologists from Georgia have reported that adult sculpin establish territories in the most preferred habitats in streams, protecting their access to high densities of prey. The oldest and biggest fish tend to occupy patches of habitat with the best prey,

forcing younger fish to occupy more open and potentially more dangerous habitats with fewer prey.

Saint Mary's University biologists found that slimy sculpin spawn in early spring in southeastern Minnesota, with males fertilizing eggs that females deposit on the undersides of rocks and logs. Males may attempt to attract multiple females to the "nest", driving off each female after it has laid its eggs. One male was reported to be guarding eggs from nine females! Males guard the developing eggs, keeping them clean and removing those that may develop fungus. Within a week of hatching, the young sculpin leave the nest and the male sculpin ends his watch over his brood.

U of M studies of sculpin genetics have documented interesting patterns that will benefit future reintroductions. Despite introducing fish from three source streams, the genetic diversity of their offspring was lower than expected. At most reintroduction sites, one source population contributed more genetically to the new generation of sculpin than either of the other two sources. This suggests that future reintroductions might better be made from a single source population, taking advantage of genetic strains of sculpin from that source to stock nearby streams that are likely be most ecologically similar to the source stream.

Have sculpin reintroductions benefitted trout in those southeastern Minnesota streams? That question is difficult to answer. Trout and sculpin diets have a great deal of overlap, especially during winter. Studies at the U of M suggest that competition for food can significantly reduce growth rates of both sculpin and fingerling brown trout. However, it's assumed that by consuming sculpin, trout will more than compensate for any initial growth suppression caused by competition with those same sculpin.

Close-up of the head of a slimy sculpin collected from Garvin Brook near Stockton, Minnesota. A numbered tag had been injected under the skin below the lip to identify the fish if it were collected again after stocking it into another stream.

Studies from the 1940s reported that brown trout in southeastern Minnesota regularly consumed sculpin. Current research by U of M biologists is finding much the same pattern, with sculpin regularly appearing in stomachs of larger brown trout in many different streams. It seems that when sculpin are present, trout will eat them with some regularity, even though sculpin are most active at night and trout feed during the day. Eating sculpin should benefit trout growth rates because even small sculpin provide much better nutrition than invertebrates with those tough, indigestible exoskeltons.

We have learned more about sculpin in Minnesota in the past 10 years than we did during the previous 100. Will we continue to learn more in the future? Sculpin certainly are an important part of coldwater trout streams in Minnesota, and reintroductions have returned these important fish to several streams. Unfortunately, Wisconsin was forced to discontinue their sculpin reintroductions because of concerns about spreading viral hemorrhagic septicemia, or VHS. In Minnesota, sculpin are still missing from many trout streams where they likely occurred early last century. Hopefully in the near future we can continue to help sculpin become reestablished in more of their former habitat, and help trout along the way, too.

# MNTU Chapter News

## Gitche Gumee Chapter

This last season has been a busy one for the Gitche Gumme Chapter, and there is much planned for 2013. The NE MN flooding of June 2012 caused setbacks in some habitat improvement projects, but two projects on the Little Isabella River and the Manitou River were completed. Remaining projects are back on track to be completed in 2013. Learn all about the habitat improvement plans by attending some of the upcoming meetings of chapter this season.

Upcoming Chapter Meetings:

Installing a half-log in the Little Isabella River

Thursday March 14, 2013, 7:00 PM
Hartley Nature Center, Duluth
Program: Northern Minnesota's Best - and Worst - Trout Streams. What makes a trout stream tick? Why are some northern streams great and others on the brink of even having trout? Learn about coldwater watersheds in Minnesota's Lake Superior basin and the threats to them.

Thursday April 11, 2013, 7:00 PM
Hartley Nature Center, Duluth
Program: Annual "State of the Steelhead" meeting. Learn how the run is going, where to find the fish, and meet up during the beginning of steelhead season to talk techniques, methods, habitat, and much more.

May 2013 – riparian tree planting and maintenance (date and location TBD)

June 1, 2013 – The chapter will be asisting the Lake Superior Steelhead Association (LSSA) with tree plantings in Knife River watershed. Plan to come out and help get some trees in the ground.

The chapter has ongoing projects planned in the Sucker and Stewart River watersheds this season, look for more information on how to participate in these projects in the May newsletter. Email or call Carl Haensel, Northern Minnesota Vice Chair at carlhaensel@hotmail.com or 218-525-2381 for information about upcoming meetings or habitat improvement.

*Carl Haensel*

## Hiawatha Chapter

Hiawatha Trout Unlimited has started several projects and events this first quarter of 2013 and has many more coming up. These include:

**January**

- The removal of several non-native trees on Blagsvedt Creek just outside of Preston, Minnesota, to clear the way for habitat improvement for the new easement
- A fly tying class through Rochester Community Ed being taught by Frank Angelotti and assisted by Phil Pankow and Carl Berberich
- The planning of the Hiawatha TU spring fund raiser scheduled for April 13th
- The planning of the 2013 Great Waters Fly Fishing Expo in Blaine, Minnesota

**February**

- Another work day on Blagsvedt Creek removing trees
- Fly fishing/casting class through Rochester Community Ed being taught by Marlene Huston and Mike Carpenter and assisted by Ray Rickets and Phil Pankow

**March**

- Work days are planned on Cold Spring Brook in Zumbro Falls and Mill Creek in Chatfield.
- The Hiawatha TU board will be attending the Driftless Area Symposium in March.
- And last, but most certainly not least, Ray Rickets is starting the transitional step down from his valued position as the Hiawatha TU Habitat Coordinator. Ray will be delegating some of his duties to three other individuals: Seth …, Paul…, and ??? to help him with his extremely busy schedule.

Hiawatha TU is committed, like all TU groups, to the restoration and protection of cold water fisheries. Hiawatha also enjoys playing a role in the education and mentoring of youth groups like 4-H, public schools, and events like the Hiawatha TU annual Rendezvous that work to teach, educate and encourage families to fish and have fun together in the outdoors.

Check out the Hiawatha TU web site at http://www.hiawathatu.org/ for more information about habitat projects, neetings and to get involved with the chapter. Call or email Ray Ricketts at 507-282-2666 or wudcanu@yahoo.com to get involved and help out with habitat improvement projects.

Keep your eyes on the web site to learn about the upcoming chapter fundraiser. It is set for Saturday, April 13th, and will include prizes, hors d' oeuvres and wine pairing. Plan on attending!

*Phil & Shelly Pankow*

## Headwaters Chapter

The Headwaters Chapter of Trout Unlimited sponsors several free fly tying events January - March for beginners to advanced tiers. Programs are held at Garden Grill and Pub in SE Bemidji from 5:30-9:30 PM. If you are a beginner and need equipment, it's available. If you are interested in when the next event will be held, call Bob Wagner at 218-586-2798.

The chapter is planning a great spring membership meeting for March. It will be held on Tuesday, March 26th from 5:30-8:30 PM at the Cattails Restaurant on Old Hwy. 71 on the north side of Bemidji. The evening begins at 5:30 PM with social time, a 6:00 PM Dinner, and then our 7:00 PM Program. We're excited to have Tony Standera, the MN DNR Area Fisheries Specialist and Darwin Sumner, a Fishing Guide from the Red Lake Reservation. Darwin's program will be "Big Trout, Big Numbers!" It's not a program you will want to miss!

Preparing a Lunker Structure For Placement in Hay Creek.

*Bob Wagner*

## Twin Cities Chapter

The year 2012 was a year of changes for the Twin Cities Trout Unlimited Board. We added a Media Team, Dan Callahan & Paul Goers to help us communicate better with our members as well as the community. If you saw or read about TCTU in the news this last year, it was more than likely due to these guys! Rich Frick (previously board member at large) stepped into the Membership Chair role and will be welcoming new members. Dean Campbell stepped into the Events Coordinating role and has been busy working on the schedule for upcoming membership meetings. Marty Steitz is back as our Volunteer Coordinator and already working on the schedule for volunteers at the upcoming Banquet! Mark Johnson has stepped into the Vice President role and will be an upcoming President nominee. Josh Mancell has stepped into the treasurers role and has been keeping us on track and in budget! To learn more about your TCTU Board, check out the Meet the Board section on the TCTU website. The new additions to our team have us excited for 2013.

**Hay Creek**

In 2012 our habitat team planned and completed work on yet another stretch of Hay Creek. Tony Nelson (TCTU), Tom Lane (TCTU) and John Lenczewski (Executive Director, MNTU), chose an engineering and construction firm to design the 10,000 ft. stretch of stream. In May, Wenck Engineering & Standard Excavating were chosen to start the first 4,000 feet to be completed in June. The entire project was finished in July with immediate growth of newly seeded prairie grasses.

**Vermillion River**

Meanwhile, the habitat team was also busy in the spring soliciting bids with contractors for the next 2,000 ft. stretch on the Vermillion River. Standard Excavating won the bid and began the work in mid-September. The work was mostly bank reconstruction and lowering, some 10-12 ft. high with about 750 feet of toe wood placement and two artificial riffles. On September 28th, we had a group of TCTU volunteers, Ron Schara Productions, The St. Paul Pioneer Press & Outdoors MN, onsite to do a final hand seeding of 4-5 acres in native prairie grasses. Keep a lookout for filming to be shown on MN Bound in the Spring of 2013.

**Mall of America Creek**

Last but not least, we accomplished work on Mall of America Creek (also known as Ike's Creek) in Bloomington. A DNR field crew had a 2 week timetable to lower a dam and re-meander a 200 foot section of stream directly above the dam using 15 ft. sections of red pine cut on state land near Shakopee. This was to create a series of plunge pools. On June 2nd, volunteers from TCTU & Boy Scout Troop 426, laid and staked fabric matting on the stream edges, hand seeded prairie grasses and planted a

# MNTU Chapter News

number of native trees to strengthen and maintain the new stream banks. Thanks to our TCTU Media Team, Dan Callahan and Paul Goers, channels 4 & 5 filmed the workday showing the project on the evening news! The results of the project are amazing with the section of stream going from a flat stream with virtually no depth to a series of plunge pools with depths of 3-4 feet. The population of Brookies has doubled from a 2011 survey of 120 fish to 250 this fall (10 fish measuring 14" in length). While the stream may never have a population that is fishable, it gives people in the Twin Cities a chance to see native Brook Trout thriving in a stream literally across the street from the Mall of America!

TCTU would like to invite you to join our membership meetings at REI in Bloomington. We meet 6:30 PM, the 4th Tuesday of the month during September – May. Our meeting programs often feature special guests including fishing guides, authors and representatives from the DNR. You will also receive updates on TCTU Habitat Projects. Stay tuned to http://www.twincitiestu.org for the latest habitat projects and updates from TCTU.

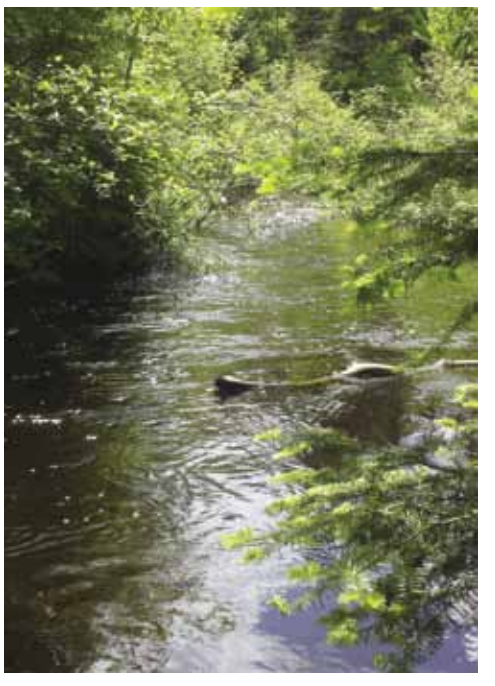
**Michelle Sparrow**

## Win-Cres Chapter

There were many chapter success stories in 2012, including the installation of water quality monitoring equipment on Garvin Brook, and the selection of The Win-Cres Chapter of Trout Unlimited as Winona County SWCD Conservationist of 2012. The Chapter is hoping to follow up this season with a wide variety of activities, and there are projects and plans afoot for the 2013 habitat improvement season. Keep your eyes on the chapter web site for information about how to get involved with habitat improvement and education programs.
http://www.wincrestu.org/

## Waybinahbe Chapter

As a result of the flooding we experienced last spring a culvert was washed out on Matuska's Creek preventing stream flow to Smith Creek. Matuska's Creek is a designated trout stream that feeds Smith Creek south of Grand Rapids. Wayne Hoshal and I have been meeting to plan a project to address this issue.
Our hope is to replace the culvert and restore the stream bed between the culvert and Smith Creek to aid in fish passage. We have prepared a grant application, which is ready to submit and we are hopeful of receiving the necessary funding. This is being done through the Conservation Partners Legacy Grant – Expedited Conservation Projects, in cooperation with the DNR.



The Dark River in Northern MN

I attended the State Council meeting in Minneapolis on February 2 in Bloomington and had the pleasure of meeting in person the many people on the council that have been instrumental in guiding TU in Minnesota. One of the items discussed is the publication of a MN TU newsletter. I am very happy that this is becoming a reality. I sincerely believe that a newsletter is the best way to keep our membership informed of what is happening in Minnesota Trout Unlimited.

**Rod Prusi**



## Silica Sand - Continued From Page 9

impact trout streams. It is possible in this karst area for mines to alter groundwater and surface water flow patterns, disrupt the recharge of the aquifers, diminish the quantity and timing of groundwater discharges into springs and trout streams, and diminish the quality of nearby fisheries.

Each sand mine or quarry has the potential to have profound impacts on the local groundwater flow system, water temperatures in nearby springs and streams, and trout populations in those streams. A MNDNR study of the Big Spring quarry near Harmony, Minnesota in Fillmore County provides a good illustration of how quarries can disrupt groundwater conduit flow paths and cause great environmental harm. Although the Big Spring quarry (35 acres actively mined) is located above the water table, quarrying operations penetrated the springshed system, causing ground water that formerly discharged at the Big Spring on Camp Creek to discharge in the quarry. This water either sinks back into the limestone to re-emerge (warmer) at the Big Spring or flows overland to Camp Creek. Dye tracing at the site demonstrated that approximately 90 percent of the groundwater basin is now being routed through the quarry. Without any dewatering occurring, this quarry has permanently altered groundwater flow paths. This water is exposed to thermal impacts and is more vulnerable to pollution from quarrying activities. Temperature measurements indicate that the Big Spring was 8 degrees Fahrenheit warmer in July than the water that first discharges in the quarry, and the stream flowing out of the quarry to Camp Creek was 17 degrees warmer! Temperature changes of this magnitude obviously can have significant negative effects on trout populations in nearby streams.

Geologists tell us that the danger of impacts to trout streams is greatest within a half mile or so of springs, seeps and trout streams. While it is possible that a protective set back of one-half mile from any spring, seeps or trout stream might prevent most instances of disruption of groundwater flow patterns and piracy of the spring flow, given the difficulty of locating all seeps it makes sense to play it safe with these rare natural features and prohibit mines and quarries within one mile of these features. Also, there is no thorough inventory of springs and seeps. The idea of giving the MNDNR money to purchase easements in such areas has been floated. We believe that protecting public resources by appropriate regulations is far better and faster. Any appropriation for this easement program will surely be far too little, and get on the ground far too late.

**Minnesota's Antiquated View of Limitless Water is Alive and Well**

Much of the public and even some agency employees are trapped in antiquated thinking – that our groundwater is limitless. State law and the MNDNR groundwater appropriation permitting program still operate as though Minnesota has a limitless supply of clean drinking water. It is true that Minnesota statutes, rules, and agency personnel increasingly acknowledge that our groundwater is a limited resource, but the nuts and bolts of how and when (always) Minnesota actually issues permits to pump out groundwater from finite underground reserves shows we are nonetheless acting as though these aquifers are limitless. Consider this:

- The state charges a "fee" of just $140 for 50,000,000 gallons of pure groundwater. This is virtually free, and does not even cover the costs of administering the permitting system. The clear message being sent is that Minnesota's groundwater is free and limitless, so businesses are free to come and waste it.
- Groundwater appropriation permits are perpetual and transferable to new owners. Theoretically permits may be subject to suspension, but only after the damage is done. The MNDNR is reluctant to cut off businesses who may have invested many dollars to operate in a given locale.
- Minnesota does have a priority of water uses in statute and rule, but this does not operate to deny issuance of a permit – indeed MN has never denied a groundwater appropriation permit in southeast Minnesota! Instead it serves only as a theoretical pecking order for cutting off certain classes of user after we have created a problem.

For many years MNTU has been cajoling our agencies to take a longer term view of sustainability and just say "no" to ill-advised water withdrawals. We have instead been told by one top level manager that his agency's job "is not to protect the resource, but to administer a permitting project." We strongly disagree. Now, and in this area of the state, it is time to reject this short-sighted and antiquated view of our limited groundwater reserves.

**Three Core Components of Protective Regulations For SE MN**

Minnesota TU members and leaders believe in the right of local communities to restrict land use in the interest of providing greater protections than minimal regulations. However, the state's precious natural resources are owned by all citizens of the state regardless of where they happen to live. The State needs to ensure that all the waters of the state are adequately protected for all, not leave the task to overworked, underfunded and understaffed counties which lack the expertise to do the job.
The following three simple measures will go a long way toward protecting our groundwater, springs and trout streams in this unique corner of Minnesota from needless damage:

- Prohibit silica sand mining and quarries within 25 feet of water table (activities may not occur at this elevation above the water table, or deeper);
- Prohibit all groundwater appropriations for mining, washing, sorting or processing silica sand, whether on site or elsewhere
- Prohibit silica sand mines and quarries within one mile of any spring, groundwater seep, trout stream or coldwater tributary of a trout stream (whether a "designated trout stream", Class 2A water, or otherwise).

**Legislation On the Matter**

As this column goes to the printer, a bill regarding the issue has been introduced in the MN State Senate. Please visit the mntu.org blog for updates.

# Headwaters Youth Flyfishing

## Building Appreciation and Respect Through Flyfishing Education

*By Bob Wagner*

This spring represents the 12th year our members will provide coordination and instructional man power for a 6 week fly fishing course for 5th graders in the Bemidji Area. This long term educational project fits the conservation and youth involvement components of Trout Unlimited mission statement.

Jeff Wade is the 5th grade teacher who started an Outdoor Adventure Club that offers archery in the fall, snow shoe building in the winter and fly fishing in the spring. The fly fishing course has been extremely popular growing from 23 students 12 years ago to over 40 students the last two years. The course covers four weeks of fly tying, one night a week for 2 hours from 3-5 pm. This is followed with one week of fly casting lessons and then two sessions of trout fishing on the Clearwater River. It's really exciting and lots of kids catch trout because we strategically plan the fishing dates after our local DNR fisheries staff stock the river. While that might sound a bit artificial to some purists, trust me; when an eleven or twelve year old youth catches a 8-12" trout on a fly they tied it's always, in their words "Awesome!" You can literally see awesome all over their faces, screams and smiles.

Two important concepts are employed through this course. We begin with youth involvement with the setting up and organizing of materials, demonstrating different skills and fostering an ongoing dialogue about the ethics, ecology, sportsmanship. This plus the great fun that leads all of us to a deeper respect and appreciation of the fish and its environment. Secondly we utilize membership involvement. TU members have the interest, commitment and resources necessary to make this work. Every year as coordinator of this project I can depend on 12 to 15 of our members as volunteers that provide instruction, materials, equipment, transportation and whatever is needed. This involvement of TU members is what makes this project successful.

We have learned that we are all (youth included) learners and teachers in this grand adventure of fly fishing. For specifics on our club's involvement in purchasing fly tying kits, writing grants that have secured rods and reels, organization and methods in teaching fly tying to 5th graders, casting, safety and actually fly fishing with large groups of youth you can come and experience it first hand, or just give me a call.

Bob Wagner
Headwaters Chapter President
Phone 218-586-2798
Shop 218-766-7757
bob@riverwooddesign.net

# Minnesota TU Needs Your Support

Minnesota Trout Unlimited is the leading voice, your voice, advocating for coldwater fisheries and watersheds in Minnesota and the region. We are the unified voice of TU chapters and members in Minnesota, and help coordinate effective advocacy, education and habitat restoration efforts. We speak out on behalf of all coldwater anglers and conservationists.

We need your direct support - members and non-members alike - to keep us working effectively for you, your family and your friends. We receive nothing from TU's national fundraising campaigns, and instead rely entirely upon your direct donations to ***Minnesota* TU**.

Minnesota TU is often the only voice speaking out on behalf of all trout and steelhead anglers, non-members and members alike. We educate and advocate in St. Paul and statewide, addressing threats posed by:

- Silica sand mining
- Excessive or illegal water withdrawals from our aquifers and streams
- Polluted runoff from poor agricultural, forestry and urban land use practices
- Aquatic invasive species and Asian carp, in Lake Superior and statewide
- Conversion of the North Shore Trail to inappropriate ATV use
- Sulfide mining
- Attempts to undermine wild steelhead recovery
- Numerous other short-sighted policies and activities

Minnesota is blessed with diverse fisheries - Arrowhead trout lakes, northern brook trout streams, Lake Superior, North Shore rivers, central Minnesota gems (The Straight, Kabekona, and many others), recovering metropolitan area streams, and the fertile spring creeks in southeast Minnesota. Minnesota TU overlooks none of them, and strives to protect, restore and sustain all.

We also work hard to secure substantial funding for our chapters and partners to restore and enhance habitat for trout and steelhead around the State. We have been very effective. MNTU also provides the essential management assistance and oversight to chapters to help get these projects completed. In just the past three years, 22 projects and more than 20 miles of trout habitat have been improved.

Every dollar of Outdoor Heritage Fund grant money goes to reimbursing the direct costs of constructing these habitat projects. So while MNTU expends great amounts of time, effort and resources to secure funding to implement habitat work, we receive no state funding for our vital efforts. We depend upon you – members and non-members – to provide the "seed money" needed to secure habitat grants. Become a vital partner in this habitat work by supporting Minnesota Trout Unlimited's efforts obtaining construction funding.

There are numerous ways in which you can help us improve and sustain your fishing opportunities, including volunteering on projects, getting active in your local TU chapter, and responding to MNTU action alerts with timely calls to policymakers. However, effective coldwater conservation in Minnesota will not happen without your direct financial support of Minnesota TU.

A little known fact is that just $2 of a member's dues goes to Minnesota TU or the local chapter, and we receive none of the donations raised from TU's direct mail and other fundraising efforts. Please continue your support of TU national. However, please remember:

**We depend upon your direct donations to Minnesota Trout Unlimited to fund all efforts here in Minnesota.**

Help keep us working for you by making a tax deductible donation. Donate on-line by visiting Minnesota Trout Unlimited's website:

www.mntu.org

Donate by check made payable to "Minnesota Trout Unlimited" and mailed to:

*Minnesota Trout Unlimited*
*P.O. Box 845*
*Chanhassen, Minnesota 55317*

Mail the form on the back page with your donation. Call or email for business sponsorship options.

All of your tax deductible donation to Minnesota Trout Unlimited will be used protecting, restoring and advocating for clean water, coldwater fisheries, and healthy watersheds in Minnesota and the region.

Thank you for your generous support!

A Wild Minnesota steelhead from the North Shore





# Project Healing Waters

By Don Eckenrode

Think about your Trout Unlimited experiences. All those years of hard work….banquets and such to scratch out a few dollars to restore a section of a stream. Then, the Outdoor Heritage Fund changes everything. The wars which have overlapped our lifetimes changes things too. The veterans of all those wars are a major thrust for Trout Unlimited nowadays. Project Healing Waters Fly Fishing is a volunteer and resource opportunity for TU'ers almost everywhere.

Four years ago, Twin Cities chapter sponsored the 50th program of this powerful organization dedicated to the physical and emotional rehabilitation of disabled military personnel and veterans through fly fishing activities. There are now 146 programs nationwide…..about half of them sponsored by TU chapters. TU National has created a management position to oversee these and other veterans' affairs.

The honorable women and men who served our country now return to VA hospitals regularly enjoying the benefits promised to them. The wounded warriors of recent conflicts crowded the "poly trauma" wards of VA hospitals some years ago. Project Healing Waters Fly Fishing was directed at their treatment and now serves veterans of all eras.

In the same 4 years that we have enjoyed the "Outdoor Heritage Fund" and the great impact on stream restoration, some 40 volunteers from TCTU, FFF, Laughing Trout club, and other heroes have served several hundred veterans…..plying our passion (some expertise) in regular sessions at the VA hospital or Veterans Homes or Veterans Day Health Care or at a lake or stream.

Imagine for a moment...

- A woolly bugger, in the colors of the Marine dress uniform, tied with his one good hand and one of yours.
- Teaching a "busted up" young man to cast the fly rod
- "FISHIN" and picnicking with a van load of vets invited to something different

Who knows how many of these heroes will return to some semblance of life as we know it; even become a TU leader, a stream champion, a youth mentor, PHWFF volunteer?
Kudos to you Minnesota TU'ers who preserve, protect, restore….etc. from the volunteers who help heal those who served! This is NOT about the fish!
For more information and to volunteer or donate your time, talent or treasury, contact Don Eckenrode.

Twin Cities - twincitiestu.org
Program lead - eckenrode.donald@gmail.com
Regional - phwmw.org
National - projecthealingwaters.org

PROJECT HEALING WATERS FLY FISHING

Cameron Kennedy With a Great Brown Trout From Spring Valley Creek in SE MN.

# Send Us Your Fishing Photos!

## Want To Appear in TU MN?

Email the editor with your photo with your name, the location the photo was taken, and any interesting information regarding the photo. We reserve the right to decline to publish any photos. Emailing the photo to the editor grants MNTU the right to utilize the photo for non-profit purposes.

# Join Trout Unlimited!

**Healthy streams benefit everyone, not just anglers.**

We'll assign you to a local chapter. Chapters meet regularly to hear about fishing hot spots, discuss conservation issues, plan work days on their home waters, organize fundraisers, and of course, swap a few fish tales and learn how to tie the latest fly patterns. All members also receive this publication as well as TROUT, TU's national magazine. Other benefits include a 16-month TU calendar, car rental & hotel discounts and more.

TU offers a variety of membership categories which allow individuals and businesses to contribute to TU's mission at the conservation support levels of their choosing:

| Membership Level | Yearly Dues |
|---|---|
| *Stream Explorer (18 and under)* | *$12* |
| *Senior (62 or older)* | *$20* |
| *Regular* | *$35* |
| *Contributor* | *$50* |
| *Family* | *$55* |

## Donate to Minnesota TU Efforts

Since just $2 of your TU membership goes to Minnesota to fund our advocacy, education and habitat work here, please include a direct donation to Minnesota Trout Unlimited. Every dollar of that donation will be used here in Minnesota.

Name_____

Address_____

City_____ State_____ Zip_____

Email Address_____

Membership Level _____

Donation_____

***Checks or Credit Cards Are Acceptted. Donate online at www.mntu.org***

VISA or Mastercard #_____ Exp Date_____

**Mail Completed Forms To:**
*Minnesota Trout Unlimited*
*P.O. Box 845, Chanhassen, Minnesota 55317*

# Reeling It In

## Of Trout, Water and People ...

**By Corky McHandle**

Well this is the first run of this column and it was a challenge to think of a subject. Much has been written in an attempt to wax poetically about how a trout stream brings about a mystical or soulful state of being. Trout streams and existentialism just seem to fit, at least for each new author on the subject. However, as we read yet another essay one can't help but think it's just a re-invention of the wheel or maybe a self induced noble calling after reading Gierach or Maclaen.

It is no doubt that many of us have felt the need to put pen to paper and write about a stream or a day on the water. Is it because there is a need to relate some spiritual enlightenment or spin a good yarn? Who knows? Perhaps it's nothing more than the author trying to explain what it is inside them that drives a passion. Or it is to smooth over a concern and convince oneself that passion is not an obsession. Or, perhaps, it is both and an effort to make an obsession acceptable. Which might just make writing about trout and fishing just part of a 12 step program we hope never succeeds. It also might be a question that never needs to be answered. All that being said it unoubtedly is a question or questions that will hopefully be asked, related and discussed over and over again.

Why? Well because as we have writers discussing these philosophies over and over again the questions remain in front of us. This spirit of 'why' or where we find our inspiration is part of what fuels the imagination of future anglers and in turns assures us that those who come behind us will muster the strength and dedication to protect and improve the very thing that is the source of these musings. Individually we all have our reasons for heading out to favorite waters or venturing out to new territory.

Even when one takes all of the apparently individual components that comprise a trout stream, as a whole they are a source of bewilderment. Be it the subtle differences in the way a fish rises to a hatch or the intricate manner in which minute insects endure countless challenges in order to mature and create those rises, they are all marvels. Independently they are intriguing. Together they are an overwhelming symphony. They resonate with the angler, bringing anticipation, curiosity, gratification and even anxiety but overall a rewarding experience.

So looking to the future one would hope that each angler can find within themselves the gratefullness to return to the resource which has given these gifts so freely. These are gifts given to the angler unconditionally. However, a truly responsible angler accepts and understands for this bond to be complete they will return those gifts unconditionally. Not neccessarily in the form of a balance sheet or ledger but to the best of their ability and to ensure that others both in the future and the present have the same oppurtunity to feel the need to express themselves poetically about a special place or a connection with nature or some form of personal growth.

In the future this column will be more topical. Perhaps about leaky waders and the one that got away or the big ole brown that lazes under the low hanging tree in the bend of the creek. For now as this newsletter is launched let's just take a moment to ask ourselves a few qustions. Why is it we might take pen to paper or camera in hand? What is our simple inspiration to get up in before the chickens or drive all night to reach a special piece of water? And lastly, what are we prepared to do in order to see that place endure?

Happy Tails to you, until we meet again.

Flyfishing the Cascade River in NE MN