

#### Kiap-TU-Wish Trout Unlimited April 2001

#### President's Lines

Our chapter may approach a pinnacle of sorts with a potential Stormwater Ordinance for the City of River Falls. About a decade of "on again off again" research, educational activities, and political pressure will be coming to a head this Our chapter's leadership is currently planning strategy for the best approach to (See Gary Horvath's influence its passage. summary inside RipRap on Page 2) Passage of such an ordinance in River Falls is long overdue. Our chapter's input will be absolutely necessary. Please contact our leadership to ask how you can help, and be prepared to be called upon to attend a meeting or public hearing. The first scheduled stop for this ordinance will be a Public Hearing in front of the River Falls Planning Commission on Tuesday, April 3rd at 7:00 PM at the River Falls City Hall. The ordinance should move on to couple of readings in front of the River Falls City Council and ultimately a vote.

In March, the DNR held public hearings across the state on proposed changes to our NR Rules that have implications on non point source pollution. These rule changes could have the largest impact on environmental improvement to date in Wisconsin. But they need your support. Here are some tidbits from the 450 page document that is proposed. For Rural Standards, we need to urge for 20-35 foot buffers and at least another 30 feet of conservation farming practices along our waterways and wetlands. For Urban Standards, support infiltration standards for storm water runoff (see Horvath article) and vegetative buffers of 50-100 feet for all new developments. Transportation Standards, we need to support vegetative buffers for all new transportation construction projects and oppose DOT exemptions from any current and future conservation rules. Please send your comments and letters on these issues to Carrol Holden, DNR-WT/2, P.O. Box 7921, Madision, WI 53707 by April 6, 2001. You can be sure that Agriculture, Transportation, and Developer interests will have their input. Shouldn't you?

Tight lines, Brent Sittlow, President

# The Annual Dry Fly Dick Frantes Memorial Flytying Extravaganza

Join us for a relaxing dinner at 6:30PM at the JR Ranch (Exit 4 on I-94 east of Hudson) on Wednesday, April 4. Then, after some post-prandial swapping of fish tales, at 8PM watch this year's group of fly tiers work up magically effective patterns for use on local streams. Tiers this year are Kenyon Scheurman of River Falls, Craig Aschenbrenner of Hudson, Andy Roth of Prescott, Jay Johnson of White Bear Lake, Jane Clarke of Eden Prairie, Murry Humble of Forest Lake Township and Mark Larson and Ron Keuhn, both of Stillwater. This may be your last chance to get the scoop on the killer pattern you've been looking for since last year's skunkings.

# Proposed Stormwater Ordinance for the Protection of the Kinnickinnic River

By Gary Horvath

On March 6<sup>th</sup>, the City of River Falls began debate on the implementation of an innovative ordinance for the management of stormwater in the city. The ultimate aim is protection of the Kinnickinnic River, which runs through the heart of the city. This ordinance targets the maximum level of impervious area for new development at 15% within the city. Developments exceeding this level will employ mitigation techniques outlined in a toolbox being developed by city consultants in cooperation with Trout Unlimited member Kent Johnson of the Kiap-TU-Wish Chapter.

As we build, we replace our natural landscape, forests, wetlands and grasslands, with streets, parking lots, rooftops, and other impervious surfaces. The effect of this conversion is that stormwater and snowmelt, which prior to development would have been filtered and captured by the natural landscape, is trapped above impervious surfaces, where it accumulates and runs off into streams, lakes, and estuaries, picking up pollutants along the way.

An increase in the amount of impervious surfaces within a watershed causes streambeds to widen, a result of frequent flooding. Groundwater recharge is also reduced, which directly impacts the spring flow that supports our coldwater fisheries. Also, during the summer months, stormwater is heated as it contacts hot surfaces such as parking lots. Consequently, as stormwater enters the

stream, it is common to have temperatures well above the lethal limit for trout.

When impervious surfaces within a watershed rise above 10 percent, impacts on local water bodies are significant, beyond 25 percent they are quite damaging. The hydrologic changes have significant impact on the aquatic habitat: stream channels become unstable and the bottom substrate becomes embedded due to sediment deposition. Biological diversity is quickly diminished as insects, such as caddis and mayflies, disappear, along with the fish, such as trout, that depend on them.

The determination of stream quality can be made based on the percent of imperviousness coverage within the watershed. The categories in the summary below indicate a qualitative degree of stream deterioration due to urbanization, as measured by the % imperviousness coverage.

#### THE STREAM QUALITY INDEX\*

% Imperviousness Stream Category Description

1 to 10: **PROTECTED** Channels are stable. Streams are rich in biodiversity. Good Water quality.

11 to 25: **IMPACTED** Channels are unstable. Water quality is fair and biodiversity if fair.

More than 25: **DEGRADED** Channels are quite unstable. Water quality is fair/poor and stream biodiversity is low.

\* Reference: Schueler, T. 1994. "The Importance of Imperviousness". Watershed Protection Techniques. 1(3): 100-111.

There are two aspects of the River Falls ordinance that make it unique in Wisconsin. First, this ordinance will set performance standards for the rate and volume of stormwater runoff, the removal of water quality pollutants, and the temperature of the runoff. This is critical in maintaining the hydrologic and thermal regimes currently found in the Kinni. Under current water quality law, thermal impacts are not considered when determining impacts to receiving waters even though for resources like the Kinni, they are crucial. Secondly, the application of an impervious standard aimed at protecting water quality has not yet been considered in Wisconsin. The city of River Falls ordinance will set a 15% effective imperviousness standard for each new development site. The goal is to help developers realize the importance of the stormwater issue early on in the design process. Once stormwater is concentrated in a pipe it is extremely difficult to manage,

especially the thermal aspects of the resulting discharge. The Kiap-TU-Wish Chapter has been working on stormwater issues for ten years in River Falls. The chapter began temperature monitoring in the Kinnickinnic in 1992. This baseline data is important in determining any impacts from future development. The monitoring has also documented impacts from existing development. This was the catalyst in the creation of the chapter video "Storm on the Horizon" which outlines the stormwater issue. Kiap-TU-Wish participated in the preparation of the city's stormwater management plan in 1994, which outlined the need for the ordinance. The chapter has been involved in the Kinnickinnic Priority watershed project since its inception in 1996. Future efforts for the chapter will focus on passage of the ordinance and the development and refinement of the mitigation toolbox. The chapter will also explore other ways to help the Department of Natural Resources complete development of a thermal model of the Kinnickinnic and other coldwater streams. This is needed to assess the effectiveness of the best management practices contained in the toolbox. Stay Tuned.

Gary Horvath of River Falls is a long-time TU activist. He's a chemist employed by the Minnesota Department of Agriculture.

# West Central Trout Committee Under Way

By Jon Jacobs

As announced in the February issue of RipRap, representatives of the WiDNR, Eau Galle/Rush River Sportsman's Club, Elmwood Rod and Gun Club, Trimbelle Rod and Gun Club, Nelson Rod and Gun Club, the Ojibleau Chapter of Trout Unlimited and Kiap-TU-Wish Trout Unlimited met in Eau Claire on March 15 to discuss trout habitat projects for the coming years.

This is a remarkable group, constructed on the principle that there is both strength and synergy in numbers and coordinated effort. The group discussed probable trout stamp funded projects for 2001-2002 which could include work on Elk Creek, Cady Creek and the Eau Galle River. There are also potential projects on the upper end of the Trimbelle River and Gilbert Creek.

The group has a brochure available for distribution at individual organization's meetings and a web site as well. The web site address is:

http://www.pressenter.com/~gravelpt/habitat/WCRhome.html

#### River Fall Clinic Set

By Michael Alwin

The Chapter's annual fly fishing clinic in River Falls has been set for Saturday, June 2nd. This is a day-long event starting at 1:00PM and going until 9:00PM. After experimenting with dates we've settled on the first weekend in June because of predictable hatches and unpredictable weather. This is the Chapter's premier public event and as such merits your attention. Each year we gather 15-20 chapter members to help at this clinic. Some folks act as guides/mentors, others help with the food and a few others donate flies to the cause. To date six dozen flies have been donated to the Chapter for this event. The bad news is that they were all donated by one member. We need your help making this clinic a success. If you would like to volunteer there are two things you can do: You can become a guide/mentor for a half day or all day or you can donate a dozen flies to the clinic. To do either, call Michael Alwin at 651/770-5854

Michael Alwin is the proprietor of Bob Mitchell's Fly Shop in Lake Elmo, MN and, in Harold Stassen fashion, is on a perpetual campaign for the position of Chapter Curmudgeon.

# Summertime and the Livin' Is Easy

Editorial by Jon Jacobs

It was eight degrees above zero at my house this morning. This was an aberration, however. The sun crossed the equator headed our way several days ago and new growth is poking through the soil on the south side of the house. Winter is breathing its last and before long those Gershwin lyrics will be a working motto. I think the length and severity of winters at 45 degrees north latitude make us appreciate summer all the more.

Norman Maclean wrote that in western Montana summer days were almost Arctic in length. That's true here, too, and Mike Edgerly, Deb Olmstead and John Koch all write movingly in this issue about fishing in that long, long gloaming with an orange-red sun suspended on the western horizon. As much as I love that "golden hour", some of my best memories of summer are grounded in fishing done in the middle of those long summer days. There are plenty of days with humidity and heat intense enough to nearly - but not quite - make one long for weather like today's, but there are just as many when the sky is a deep blue, the air is clean and fresh and every plant on our limestone coulee landscape photosynthesizing in overdrive.

My daughter and I have motored off down country highways leading through the fields, pastures and woods, all a deep, rich green, to reach little brook trout creeks. The little char in those creeks seem driven by a sense that the good times and abundant food supply can't last and feed recklessly.

While pursuing brown trout on the upper Kinnickinnic on a July afternoon, I was distracted from my fishing by two beautiful flying objects. The first was a showy hummingbird, one of nature's prettiest creations. second was a bright red biplane. It appeared out of nowhere and stood in stark contrast to the cloudless blue sky. The pilot had the limitless skies to himself and as I watched, he executed an inside loop before making straight for the horizon. I can't know if the pilot simply felt as enthused about the day as I did and expressed his joy in that loop, or if he put on a show specifically for me. I do know that when I asked my partner later if he had seen this, he looked blankly at me. Maybe I had a minor stroke in that bright summer sun and imagined the whole thing. If that's so, I hope I've retained enough of my senses to know that I'm in a special time in a special place in a Wisconsin summer.

# Postcard from the Edgerly

#### Riverus Maximus

By Mike Edgerly

was not yet 10 years of age and John Kennedy was president when I first fell in love.

Girls would come later, but my first love was a stream. Or what we in Western Kentucky called a crick. Panther Creek was rocky and narrow and lined with hardwoods where it began at the end of a remote farm field as an outflow from a lake created by an old earthen dam. As it flowed through miles and miles of farmland and woods, Panther Creek slowed and deepened and became fine water for bluegills and catfish. I caught my first bluegill in the lower reaches of Panther Creek on a long cane pole with a bobber above a hook baited with pieces of night crawler. Later, in the throes of Thor Heyerdahl's grand adventure book, I launched on the swift summer current of Panther Creek a small, homemade model of the raft Kon-Tiki. I imagined my little creation floating the length of the creek to its meeting with the Green River and beyond. maybe even to the sea. The only road to upper Panther Creek crossed the stream and halted at the little house where my father lived during the week and where my mother and I would join him on the weekends, while he oversaw some mysterious attempt to extract nitrogen from the gas produced in the subsurface oil deposits. Most weekends I had the creek to myself. Looking back, I recall Panther Creek as fondly as I do my neighborhood pals and girlfriends.

By the way, my wife the therapist says yes, it is OK for me to love a river. Which is to say, the same way I love barbecued chicken, ribs and peanut butter and hot sauce sandwiches.

Now, almost four decades later, I have found a river I love as much as I loved Panther Creek. I came to my love affair with the Kinnickinnic one summer in the early 1990s, not long after to moving to the upper Midwest. I fished the river several times before I learned some of its secrets and tricked a trout and landed it. The Kinni seemed then, as it does now, a river too good to be true.

The Kinnickinnic will always be a summer river to me. The power and life of the stream are most apparent on those long evenings when angling until 10 p.m. is entirely reasonable, when the moon rises through the trees and the stinging nettles bite at my arms as I pick my way along the bank watching for rising trout. On these nights the sounds of moving water, a squawking heron jumped from its stalk in the shallows and the thrashing of the startled deer through the timber, the night birds and the whistling of the fly line and ultimately, the sound of a fighting fish are amplified in the humid air.

There are bigger trout in other streams, of course. But the Kinni has some big fish, too. On a July night, when the big mayflies are on the water, and mosquitoes torture every square millimeter of exposed human flesh, place yourself along a deep run with good cover, where the river glides out of a riffle and watch the big boys come out to feed. Leave the 4x tippet in your vest. Tie on some of the heavy stuff, and if you have the right fly, and present it properly, hold on tight to your rod. A few seasons ago, I found a dead trout from the Kinni lying in the grass along the bank. Only the head was left and it was bigger than my hand.

But with the Kinni, the size of the trout is not the point. It's the combination of wild fish, river and woods, which keeps me coming back.

This summer when the days are long and warm, and there are hummingbirds in the air and the phlox are blooming and the earth smells rich and alive and the mayflies and caddis have the trout rising, really rising, almost as if they are the only beasts on the planet, I will hike deep into the woods to the spot where I caught my first wild Kinnickinnic brown trout. I will again be the kid who fell in love with a stream.

Mike Edgerly, of St. Paul, MN is the managing editor of Minnesota Public Radio news.

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#### Trutta Maximus

By John Koch

The cool water rushing about my legs will be a refreshing reward after slipping along the muggy, weed infested trail. Often out of sight beneath shoulder high grass and weeds, the path is oftentimes a mud-filled trench, worn into the stream bank by perhaps a hundred years worth of fishermen tramping up and down it's banks. A nasty fall is invariably prevented by grabbing at the closest thing available — a handful of nettles. *Urtica dioica* is a permanent fixture in my fishing life, going back to the first painful encounter of the noxious weed grabbed as a child in pursuit of a fly fishing father.

I pause at a normal ford point along the stream. The physical act of kneeling down into the water and letting it flow about my legs and waist is sublime. As an excuse to stay put for a spell, I pick a small stone off the bottom and examine its occupants. Several mayfly nymphs scurry for cover amid the upright cones of caddis cases. Next to several frantic scuds, a dragon-like stonefly nymph suddenly moves, breaking his almost perfect camouflage. I put the stone back into its place carefully, lest anyone gets crushed.

Another length of hot, muddy trail. This time it opens into a friend's pasture; a welcome relief from the claustrophobic confines of the trail. A small rise separates me from the stretch of river I want to fish: a wide riffle that turns into a deep pool after taking a 90 turn against a bare limestone cliff.

I take a break sip some water, sit, listen and watch the sliding river.

In the shimmering, golden light of late afternoon, I watch as the telltale signs of feeding trout unfold below me. From my viewpoint, a swirling mass of caddis appears at first to be a mist traveling over the water, the insects twirling a wild and crazy dance across the surface of the fast moving water. Golden brown flashes just below the surface of the water give away the trout's presence as they gorge on the emergent insects. My fly of choice is a non-descript bead headed olive nymph: fished on a swinging tight line drift, it imitates a wide array of aquatic insect life in its larval/nymphal/emergent forms.

A cast across, a sweeping drift down.

On the third cast my efforts are rewarded with a golden swirl and a suddenly taut line. My fly line lunges violently, signaling a striking trout, and in an instant goes profanely slack. Quickly retrieving the fly, there is no evidence to suggest why the fish got off: no broken line, no poorly tied knot, no broken hook.

I resume fishing: a cast across, a sweeping drift down.

It is a good evening. In a rhythm learned on the same river bend long ago watching my father, I catch and release the swirling trout. Now and again I change fly patterns; experiments from last winter's tying desk - at last it's time to put them to the test. Out of a dozen or so likely candidates, only one or two will earn their keep over the season and become trout flies; to be tied en-masse on a cold winter's afternoon, with the Adams and the Coachmen, to be handed on to others.

As night falls, my imagination fills the gathering darkness as the sun retreats from the day. Hurried scuttling in the brush become black, rabid bat-winged creatures intent on attacking my neck. A cow's cough is magnified into something from another planet (Elmwood is not that far away, after all). A distant thunderstorm turns into cattle rustlers, slamming the gates of their truck as they load my neighbor's cattle in the night...

The hot, humid day has turned into a cool summer's night. Despite the booming and banging of the "cattle rustlers", the sky above me is awash with a crystal veil of stars. As the hatch of aquatic insects finish their individual cycles and the river slips into it's nighttime rhythms, so do my tactics change. The tiny nymph is replaced with a huge deer hair dry fly. With a bushy brown stacked deer hair body and wild, peafowl wings, the fly resemble nothing in the natural world, save some sort of demented moth.

Skipping the pretense of a tippet, I tie the fly onto a stout leader and drift it across the pocket water. The fly, it's wing's treated with Flexament, floats like a cork and sputter's seductively as I strip it across likely looking spots. Several small strikes signal that the fish are interested, but not large enough to get this mass of hair and feathers into their mouths. Moving on to the large tail-out below the faster water, I let the fly drift out of sight into the gloom. Two short strips and a tug at the line signal a fish has finally gotten the hook into its mouth. Another, more violent yank on the line and a splash that sounds like a cow jumping into the water signal a large fish.

The memory of the fight that ensued has quickly become a blur, so that now I recall only a tangle of visions: following the fish up and down the pool, a misplaced flashlight, a heart-breaking tangle above my head, and finally a *very* large brown trout gently released back into the pool.

The shrill "peeent" cry of the nighthawk breaks the summer night's stillness, signaling it's time to go home. Avoiding the tunnel vision created by a flashlight, I walk by the ambient light from the night sky. The cattle rustlers have left, the cows have turned back into cows, and I'm tired.

John Koch, a native of western Wisconsin, is a Kiap-TU-Wish board member and a frequent contributor to RipRap.

### All the Way Home

By Deb Olmstead

If you are a "grownup" female and a novice angler like me, you may be somewhat wary of taking a solo-fishing trip to a river and place you've never been. But I did it. I had a very big and wonderful adventure fishing Michigan's Au Sable River where it runs through the little town of Mio. Mio is roughly at the second knuckle of your left-hand index finger, palm side down. Your left hand, of course, being the mitten map of the Lower Peninsula. (I have my map of Lower Michigan with me at all times!)

I have to confess that this trip wasn't exactly like traveling to say, Ketchum, Idaho, where I've never been and know not a soul. I was traveling to the state of my birth, and to an area filled with childhood memories. But not having been in the Mio area since age 13 when we sold our hunting cabin deep in the Mio woods, it would be "new" to me. I had two goals - - a fly-fishing adventure on the famous Au Sable and an attempt to locate our old family property.

I prepared for my adventure by gathering helpful information from two fly shops in the Grayling/Mio area. I wrote to author and Michigan guide Bob Linsenman and discovered that he used to live in Burnsville, Minnesota, and that his two children attended the school where I teach and am a guidance counselor. As the saying goes, it's a small world. I also contacted Mio's Chamber of Commerce. In a casting class I took at Bob Mitchell's Fly Shop, instructor Bill Hinton and fellow student Sandy Rolstad gave me further useful tips. In a moment of serendipity, Sandy shared that she was a good friend of Bob Linsenman and had, her very own self, fished the Au Sable in Mio!

I chose to begin my adventure the week of August 13. I drove my trusty old Honda Accord through pristine National Forests in Wisconsin and along Highway 2 in the Upper Peninsula of Michigan to the Mackinaw Bridge. From there it was an easy drive to Grayling, a quaint little town and home of The Fly Factory where I bought some

flies and a license. The shop is literally on the banks of the Au Sable, and the folks in the shop were welcoming and knowledgeable. Highway 72 to Mio was the perfect "road trip" road - - two lanes with no shoulders, over-arching trees in places, and a wilderness-like feeling. I arrived in Mio in the early afternoon of August 15 and stayed at the Au Sable Inn. It was within walking distance of "The River," reasonably priced, squeaky-clean, and brand new! The smell of fresh paint permeated the hallways. The first thing I saw when I looked out my window was a horse and Amish wagon clop-clopping down the street. The town itself was not as developed, as gentrified, as I thought it would be. In sharp contrast to my inn, the whole town looked like it could use a coat of fresh paint! I think it is one of the few remaining areas of Lower Michigan still untouched by frantic activity, fast-food, or Starbucks. I liked it - except for the absent Starbucks!

I used the hours I had before fishing to visit the county courthouse. I was prepared: west 5 rods of south 16 rods of southwest ¼ of southwest ¼ section 22, township 26, range 3 east! A pleasant woman in one of the offices gave me a map, of sorts, and a rough idea of where to go to find MY CABIN. After driving up and down and up and down the same few roads and blatantly trespassing more than once, I decided that I needed more help, and that the rod I ought to be focused on at that moment had my reel attached to it. I abandoned the cabin search for fish.

A White Fly hatch occurs at dusk in mid-August, so I set out to fish around 6:00 P.M., stopping here and there to take in fabulous views of the river. I fished at Comins Flats, a wide, somewhat fast, and relatively shallow spot. That area was easy to find and provided good parking. A group with canoes was just coming off the river when I arrived so I sat on the bank for awhile and chatted with another angler. He moved downstream and I waded in. I have never had more fun NOT catching fish! It was windy, and I am not good at fishing upstream in the wind with a large fly. But what I experienced was so spectacular it didn't matter. When the hatch occurred, a snow shower of huge white flies swirled up and enveloped me. Fish rose all around me, many within an arm's length. It was unbelievable and exciting, but no fish took my fly. The activity continued into the dark. I eventually gave up and sat on the bank to put my gear away literally by the light of the moon. A father and son on the bank talked with me and also watched this phenomenon of nature. perfectly safe and somewhat in awe of the experience. Being in touch with nature often seems to be the real point of life. It was hard to pack up and drive back into town.

Early the next morning I fished at the public access across from my inn near the town bridge. I was alone with the rising trout and the frequent hatches of insects, which I couldn't identify but could appreciate. Remnants of the previous night's frenzy floated by looking like small white islands. When Bob Linsenman called me later in the day, I was sorry to have to tell him that I went two for two on the Au Sable and caught no fish. It would have been gratifying if I had, but it honestly didn't bother me. Nor did it dampen my spirits that I failed to find the cabin property on my second afternoon foray. The weather was perfect, the river was magnificent, and I was in an area of the state that I had wanted to visit for a long time. No fish and no cabin, but I enjoyed every minute of the adventure. Would I go back to Mio and the Au Sable? Would I take a trip again by myself? In a heartbeat!

Deb Olmstead lives in Minneapolis. This is her first contribution to RipRap.

## The Giant Stonefly

By Clarke Garry

As part of a display for UW Day in Madison in early March, I had two binocular microscopes set up. I invited passers-by to look at a selection of Kinnickinnic River insects under the 'scope and see a sample of the diversity of life found in the river ecosystem.

I sometimes fail to anticipate that a large insect can hold more immediate attraction and appeal than one which is smaller and less noticeable. It is interesting that once "hooked" on a larger insect many people will become interested in the smaller ones. They can then be fairly easily encouraged to use the microscope to satisfy their curiosity. So while getting warmed up at being in the booth, I quickly learned to pull out the vial with the largest, most intriguing looking insect from the "Insects of the Kinnickinnic" vial rack, the larva of the giant stonefly. I would produce this impressive insect and entice them with something like, "Have you ever seen one of these?"

The giant stonefly of the East and Midwest can be either Pteronarcvs dorsata or P. pictetii (Plecoptera: Pteronarcyidae); the two species look very much alike both as larvae and adults. These are close relatives of the well-known salmonfly (Pteronarcys californica) of the West. Placement of all of these, as larvae, into the family Pteronarcyidae can be established on the presence of highly branched gills on abdominal segments 1 and 2 as well as on the thoracic segments. And, of course, the large size of mature larvae and adults (35-50 mm, up to 2") is a real giveaway.

A key provided by Harden and Mickel (1952) allows a reasonable separation of species based on larval characteristics, given that the larva is male. (Separation of female larvae to species is problematic because it is based solely on body length.) In males the triangular shape of the 9th abdominal sternite is diagnostic. All male larva that I have examined to date from the Kinnickinnic have been *Pteronarcys pictetii*.

Numbers of giant stoneflies in the Kinnickinnic are not large. Out of 788 stoneflies that I collected in the 1999 macroinvertebrate inventory, I recorded 31 *Pteronarcys* specimens. Giant stoneflies have an assigned tolerance value of 0 (based on a ten point scale, 0=excellent, 10=very poor) (Hilsenhoff 1987) and so are indicators of high quality water. They occur in the Kinni from Kinnickinnic River State Park to upstream from the Liberty Road bridge. It is interesting (and may be of significance) that I have not found them at sites upstream from this point. This, again, fits a distribution pattern that I've observed in certain mayflies and caddisflies.

Giant stoneflies have a rather ominous appearance with their dark exoskeleton, sharply-cornered pronotum, angular wing pads, stout legs, and robust, cylindrical form. The niche they occupy in the stream, however, is that of shredder. Stewart and Stark (1993) mention that *Pteronarcys* larvae are the "major shredders of CPOM [Course Particulate Organic Matter (particles larger than 1 mm in size)] in stream systems." They also note that, "... gut-content studies have indicated that detritus and diatoms are the major *Pteronarcys* food sources..."

Giant stonefly larvae develop in moderate current on rocky stream bottoms where their food sources collect. Larvae molt many times as they grow to maturity; this requires two to four years. Mature larvae crawl out of the water onto the bank, typically clinging to a rock or log, in preparation for adult emergence. Adults are sometimes seen in early morning after emergence, or in the evening when they return to the stream to oviposit, but they are basically nocturnal (Borger 1980). Minnesota records indicate that adults of *P. pictetii* emerge in May and June (with one August record) (Harden and Mickel 1952).

Hafele and Roederer (1995) indicate that, "Wherever Giant Stoneflies are found they provide a constant food supply for fish." Borger (1980), speaking of the larvae of these stoneflies, says that trout are "... well acquainted with them."

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A publication of the Kiap-TU-Wish chapter of Trout Unlimited, No. 0168, P. G. E-mail RipRap at turiprap@hotmail.com Visit Kiap-TU-Wish on the web at http://

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**MEETING AND PROGRAM SCHEDULE:** 

APRIL 4: Fly Tiers

MAY 2: Rush River Survey Results

DEADLINE FOR MAY RIPRAP: FRIDAY, APRIL 20

on, WI 54016

2001