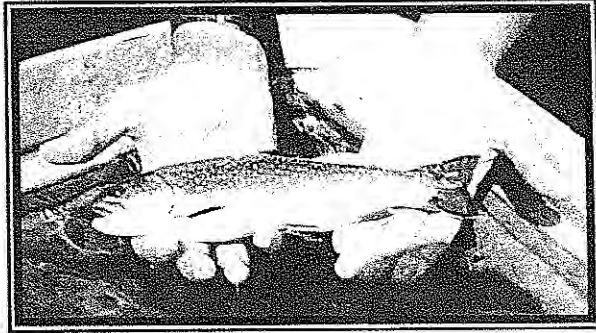


# **APPENDIX**

## **Photos**

Fine specimens of Iron  
River Brook Trout



Below: High quality sections of the Iron  
River





Urbanization  
in the  
Iron River Watershed



Above: Aerial view of the City of Iron River

Above: Auto dealership  
adjacent to the river

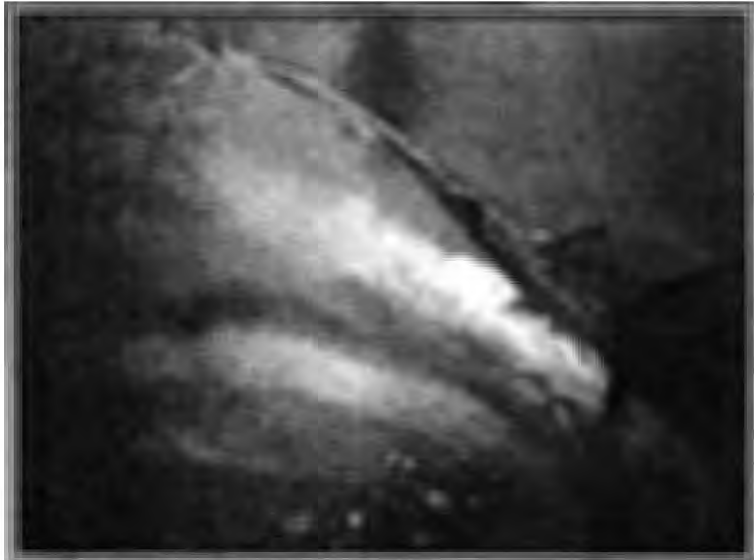
Below: Waste water treatment plant

Below: Repair made to an eroding gully





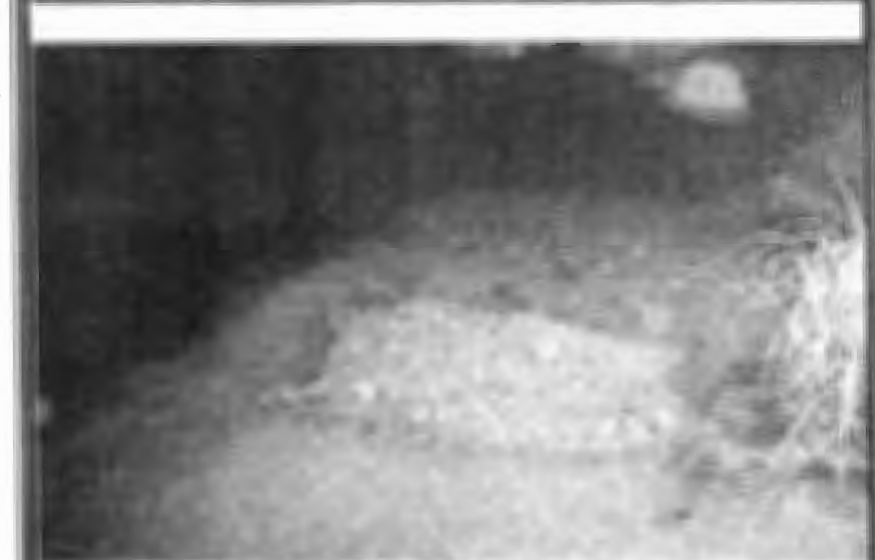
Runoff from Gravel Pits



## Examples of Sources of Sedimentation



Erosion from livestock at the Olsen Farm



Sediment runoff at the outlet adjacent to the northeast corner of the 7<sup>th</sup> Ave. bridge in Iron River



Sediment being discharged from the storm drain outlet at the Apple Blossom Trail parking lot in Caspian



Runoff from Gravel Pits  
(continued)



## Nanaimo Park Storm Drain Outlet

Photos on the left were taken summer 2000, photos on the right were taken spring 2001.  
Notice the continuing erosion along the drain pipe.





Storm Drain Outlet  
at Sturgeon & 6<sup>th</sup> Ave.  
in Iron River

“Pappy Park”





## Iron River RV Park

Eroding bank on  
south side of  
Genesee St. In the  
Iron River Rv  
Park



Middle storm  
drain outlet in the  
Iron River Rv  
Park



View from middle  
basin of the storm  
drain outlet,  
looking west  
toward the outlet

Iron River  
RV Park



Above: Aerial  
view of RV Park

Below, Left:  
Eastern most  
section of storm drain channel, draining into the Iron River



Below: Middle section of storm drain, facing  
the Iron River. The vegetation in the  
foreground of the basin has encroached over  
previously accumulated sediment and is  
representative of what the entire basin looked  
like prior to maintenance. Notice the new  
plume of sediment beginning on the right side  
of the channel.





**Yellow Boy**

**Waste rock pile,  
source of acid runoff**



**Wetland inundated  
with yellow boy,  
note the frog living  
in the wetland**



**Tree branch  
removed from  
yellow boy  
contaminated water**



Acid Mine  
Drainage

Aerial view of  
channelized section of  
Iron River and nearby  
waste rock piles



Series of Dober Mine  
treatment ponds



Large fields of graded  
waste rock near the Iron  
River



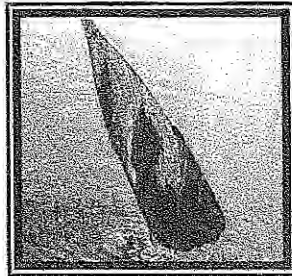
### Wild River Road Culvert Dam Crossing

Above: River upstream of crossing

Left: Silt accumulation

Below Left: Aerial view of crossing

Below Right: Looking upstream from inside the culvert



# **APPENDIX**

## **BMP Descriptions**

## **BMP Descriptions**

### **Abandoned Well Capping**

The plugging and permanent closure of a well no longer in use. This prevents the entry of contaminated surface water and debris. It also eliminates the physical hazard of an open hole to people, animals, and machinery.

### **Alternate Watering Source**

It provides an alternative water source for livestock. This reduces heavy use impact on surface water and keeps livestock away from waterways. Alternative watering systems can include sling pumps, hydroram pumps, solar pumps, or wells.

### **Animal Waste Facility**

The construction of a facility to store animal waste. These systems contain animal waste to a controlled area and thereby limit the amount of nutrients that are carried in runoff.

### **Basin Retrofit**

The modifying of a basins size and/or shape to adequately handle or store runoff for a given area.

### **Boulder Placement**

Provides over head cover and resting areas. Also creates added depth by scouring resulting from reduced channel capacity and increased current velocity.

### **Brush Bundles**

The brush bundles are designed to trap silt, which is then invaded by encroaching vegetation that causes further narrowing of the stream. Brush bundles also provide excellent habitat for Brook trout fry.

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### **Channel Constrictor**

Serves as a modified deflector designed to create overhead cover similar to that provided by undercut banks.

### **Check Dams**

Check dams are constructed across drainage ways to reduce concentrated flows in the channel and protect vegetation in the early stages of growth. They can consist of stones, sandbags or gravel, and are most commonly used in the bottom of channels that will be stabilized at a later date. Although check dams also collect sediment and hence act as filters, their primary purpose is to reduce erosive velocities.

### **Cover Crops**

The temporary use of grasses, legumes, or small grain to control erosion, improve the soil structure and infiltration. May also be used in nutrient management to provide a nutrient source for future crops or to utilize excess nutrients from previous crops.

### **Cover Logs & Root Wads**

These structures provide overhead cover in sections of stream where existing water depth may be adequate, but cover is lacking.

### **Critical Area Treatment**

Planting of trees, grasses, or legumes on highly erodible areas to stabilize soil and reduce erosion and sedimentation in and along waterways.

### **Cross Log and Revetment**

Creates a scour pool formed by water pouring over the top of the cross log or by forcing its way underneath. Revetment logs create overhead cover and protect the bank at the same time.

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### **Detention Basin**

Basins which are designed to receive and detain stormwater runoff for a prolonged period of time. Detention basin is achieved by use of an outlet device regulating the flow from the basin at a rate which minimizes downstream erosion, reduces flooding, and provides for enhanced pollutant removal.

### **Diversion**

A diversion is a graded channel and ridge constructed across a slope, perpendicular to the direction of the runoff. It functions to protect other BMPs and sensitive areas by intercepting and diverting runoff and carrying it to a stabilized area. Diversions can be bare channels, vegetated channels or channels lined with a hard surface material.

### **Double Wing Deflector**

Creates midchannel pools through scouring action in shallow sections of streams.

### **Fencing**

Restricts access to surface water, resulting in streambank protection; reduction of organic matter, fecal coliform, and nutrient loadings; and prevents shallowing and widening of streams to keep water cooler.

### **Filter Strip**

Areas of vegetation, usually perennial grasses or legumes, adjoining a stream, ditch, lake, wetland, or flood plain. These aid in the removal of sediment, organic matter, and other pollutants from entering the water supply.

### **Forest Riparian Buffer Strip**

An area of forest adjoining a lake or stream that is preserved from logging or development. The forest riparian buffer strip aids in the removal of sediment and other pollutants from entering the water supply, stabilizes streambanks, provides shade to keep water temperatures from rising, deposits woody debris for stream habitat, and serves as a living highway for many animals and migratory birds.

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### **Grade Stabilization Structure**

A permanent structure which stabilize grades in natural or artificial channels by carrying runoff from one grade to another. These structures include vertical drop structures, chutes, pipe drop structures and downdrains. They may be made of rock riprap, concrete, metal, wood and/or heavy plastic.

### **Grassed Waterway**

A natural or constructed watercourse consisting of vegetation and designed to accommodate concentrated flows without erosion.

### **Infiltration/Retention Basin**

A water impoundment over permeable soils which receives stormwater runoff and contains it until it infiltrates the soils. These basins remove fine sediment and the pollutants associated with them.

### **Infiltration Trench**

A long, narrow, shallow excavation located over porous soils and backfilled with stone to form a subsurface reservoir to hold stormwater and allow it to infiltrate the soil. Infiltration trenches remove fine sediment and the pollutants associated with them.

### **K-Dam**

K-Dams create pools or deeper water through scouring actions in shallow sections of stream. In continuous, steep gradients, the short, upstream break in gradient also provides resting area, often holding more fish than does the deeper pool below.

### **Livestock Crossing**

A structure enabling livestock to cross from one side of the stream to another, minimizing stream bank erosion.

### **No-Till**

The growing of crops in previously untilled soil and residue to: reduce sheet, rill, and wind erosion; improve surface water quality by reducing pesticide/sediment movement; conserve soil moisture; and provide food and escape cover for wildlife.

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### **Reduce Till**

The growing of crops where field is tilled prior to planting, leaving some residue. This practice will help to reduce sheet, rill, and wind erosion; improve surface water quality by reducing pesticide/sediment movement; conserve soil moisture; and provide food and escape cover for wildlife.

### **Sediment Basin**

Sediment basins are man-made depressions in the ground where runoff water is collected and stored to allow suspended solids to settle out. They are used in conjunction with erosion control measures to prevent off-site sedimentation. They may consist of a dam, barrier or excavation, a principal and emergency outlet structure, and water storage space. Their primary purpose is to trap sediment and other course material. Secondary benefits can include runoff control and preserving the capacity of downstream reservoirs, ditches, canals, diversions, waterways and streams.

### **Single Wing Deflector**

Constricts and diverts water flow so that stream meanders and pools are formed by scouring and relocation of fine sediment and gravel.

### **Slope/Shoreline Stabilization**

This addresses structures which stabilize shorelines and slopes that cannot be stabilized with vegetation. Structures included in this BMP are: revetments, gabions, seawalls, bulkheads, groins, breakwaters and retaining walls.

### **Stabilized Outlet**

Outlets are areas which receive discharge water. Stabilized outlets are outlets which reduce the velocity of discharge water to non-erosive velocities.

### **Stormwater Conveyance Channel**

A permanent waterway, designed to convey stormwater runoff. The channel is lined with vegetation or riprap, or, in limited cases, gabions, which extend the side slopes to design flow depth. This practice provides a means of transporting concentrated surface runoff without causing erosion or flooding.

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### **Stream Bank Stabilization**

This BMP addresses methods which can be used to stabilize eroding stream banks by reducing erosion and sedimentation caused by livestock access, surface water runoff, pedestrian, wildlife, and vehicle traffic. Methods include riprap and vegetative controls.

### **Watercourse Crossing**

Watercourse crossings are typically used to provide a more confined, safer, and environmentally sensitive means for crossing one side of a watercourse to another.

### **Wedge Dam**

Wedge dams create pools or deeper water through scouring actions in shallow sections of stream. In continuous, steep gradients, the short, upstream break in gradient also provides resting area, often holding more fish than does the deeper pool below.

### **Wetland Restoration/Creation**

The restoration, creation, or enlargement of wetlands to filter runoff from surrounding areas, reduce flood potential, improve wildlife habitat, and recharge groundwater.

### **Windbreak**

The establishment of trees to reduce wind velocities and thereby decrease the potential for wind erosion over agricultural fields.

### **Yard Waste Management**

Yard waste management refers to procedures to limit nutrient input from leaf litter, lawn clipping and other yard waste from entering a waterbody. Compost bins are a common methods of yard waste management.

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## **APPENDIX**

### **Past Articles and Press Releases**

# Watershed Council welcomes its new project manager

By Marian Nelson

CRYSTAL FALLS—For someone "getting his feet wet" in a career in natural resources, the position of project manager for the Iron River Watershed Council couldn't have been a better catch.

Bond, a 1997 graduate of Gustana College in Rock Island, was working at Borders Bookstore when he learned from family

friends of the job opening in Iron County.

"I was looking for a position in natural resources that wasn't so urban," said the Chicago native.

"I wanted to be in the field, not on a roof looking at a smokestack."

Bond got his wish this July, when he found a pair of waders waiting for him at his new desk in the Iron Soil Conservation District office.

The position is funded by a grant from the Michigan Department of Environmental Quality, and places him as an employee of the SCD.

THE FIVE-YEAR grant is divided into two parts. The first two years, Bond said, is the planning stage. During this time, he will be conducting his own inventory of the Iron River and its tributaries. He will also use data previously collected. He will be looking for "critical areas" of sedimentation and contamination.

The second half of the project will be implementation of projects designed to maintain, preserve and enhance the waterway.

"I will be doing water quality testing, visual testing—a lot of studying and assessing," said Bond, who has a bachelor's degree in biology with a concentration in environmental studies.

"There are a lot of scattered bits and pieces of information," he continued. "The schools have done some research. White Water Associates have some data. I'll be pulling it all together."

Bond is impressed with what he has seen so far.

"A lot of work has been done al-

ready," Bond said. "I learned that Iron River used to be much worse than that it would flow red with runoff from the mines."

"I think the direction we're going in is to preserve what we have and find areas to make even better. That good definitely outweighs the bad on this river."

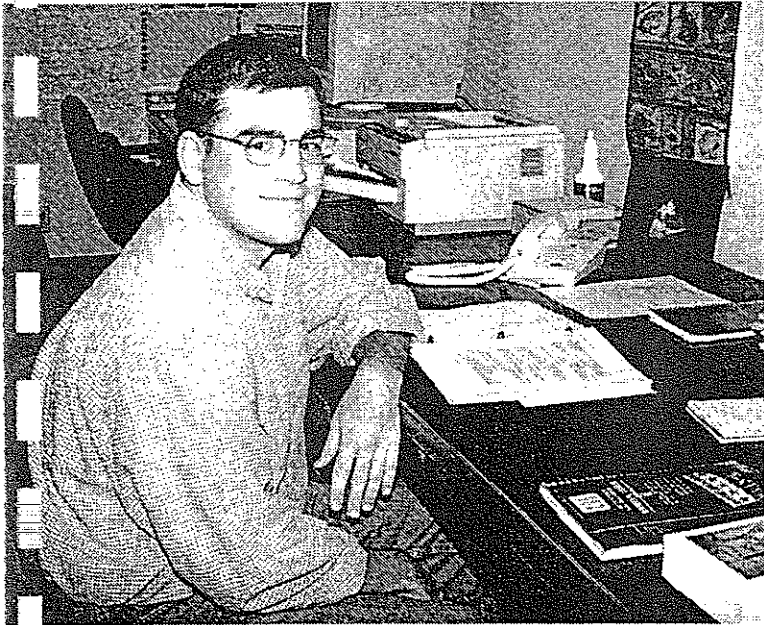
Bond has made a few adjustments in his exodus from the city.

"I need a four-wheel-drive truck for one," he laughed. He misses the variety of restaurants he was accustomed to in Chicago and is looking for "some great Mexican food." With hiking, fishing and mountain biking as hobbies, he's looking forward to spending his free time joyfully.

"I feel fortunate to have got this position," he said. "It's such a great opportunity to gain experience in the field of environmental studies."

"The Watershed Council deserves a lot of credit, it's played a big part in getting the Iron River project underway. Their concern and care about the quality of the river is outstanding."

Anyone with questions on watershed issues may contact Bond at (906) 875-3765.



Bond, working under grant funding by the Michigan Department of Environmental Quality is the new face at the Iron Soil Conservation District office in Crystal Falls. His position as project manager for the Iron River Watershed Council will involve monitoring critical areas on the river and implementing projects to restore and preserve the waterway.

ggi was born and raised in r. Eventually he moved to Minn. He is a consistent of letters to the *Reporter* riter.  
 eporter welcomes letters and from readers regarding outdoor interest.

# IR Watershed Council lists its 1999 accomplishments

IRON RIVER—President Bette Premo of the Iron River Watershed Council, listed last year's accomplishments and milestones at the March 6 meeting of the organization.

"Thanks to the assistance from a Michigan Department of Environmental Quality River Cleanup Grant and volunteers of the watershed council, ACE (Alternative Center for Education) High School and West Iron County High School, over 9,400 pounds of trash were removed from the Iron River. The old 7<sup>th</sup> Avenue Bridge structure and all the cement abutments (over 27 tons) were removed. This annual river cleanup activity has been a significant event in cleaning up the Iron River," she said.

"THE WATERSHED council wrote two grants that were awarded to the Iron Conservation District by MDEQ in 1999. These grants serve to support the watershed project manager Jim Bond, who is conducting an inventory of the watershed and prioritizing needs for improvement. With the council's help, Bond documents the physical and chemical characteristics of sites on the river, identifies places where mitigation projects could help the river, and will assist with procuring funds to support those projects.

"Bond also is instrumental in informing the watershed residents about his work," noted the president.

"Ace students completed another year of community involvement to help citizens understand and appreciate the Iron River," Premo said. "Through their service-learning programs, ACE students have learned how to take water quality measurements, have documented their studies in reports and conferences that are available to the public, and they have constructed a nature trail along the river.

ALSO, "WICHs students, with a grant from Trout Unlimited, have been studying the effects of acid mine water pollution. They are seeking ways to improve trout habitat. Their studies, led by teachers Joel VanLanen and Chris Anderson, have been reported to the watershed council at a special presentation made at the WICHs. Students demonstrated a broad understanding of the issues surrounding the mining history and resulting effects on the river," Premo stated. "Their work toward habitat improvements is much appreciated."

The president also said, "The watershed council is also actively seeking grants to extend the Apple Blossom Trail along the river up into the city, improve recreational accessibility to the Iron River,

improve waterfowl habitat and mitigate acid runoff from the mine tailings."

THE COUNCIL looks forward to year 2000. "During this year we will nearly complete the Iron River Watershed Plan. We will gain more information that helps us to improve the water quality and trout habitat of the river. We will support education that informs watershed residents of their important role in keeping the Iron River healthy and clean for generations to come," Premo concluded the report of 1999 in review.

The watershed council meets the first Monday of the month, at the conference room of the Iron River Ranger District of the Forest Service.

At the March 6 meeting, secretary/treasurer Karla Parrott, administrator of the Iron Conservation District, reported the council received an award from the Michigan Outdoors Writers Association in recognition for continuous volunteer effort and demonstrating effectiveness in preserving, protecting and enhancing the waters of Michigan.

## Bovine TB meeting April 12

CRYSTAL FALLS—There will be a satellite conference dealing with the proposed statewide TB surveillance program held on Wednesday, April 12, from 6-9 p.m. at the Forest Park High School Library. The conference is being coordinated by Michigan Farm Bureau and sponsored by MDA in cooperation with the Michigan Departments of Community Health and Natural Resources, USDA and MSU.

Following the satellite conference there will be a telephone conference call between the participants at the Ontonagon and Iron County sites to discuss what our Western U.P. strategy should be with respect to the TB issue facing Michigan farmers.

This program should be of value to all livestock producers in our area. The Growing U.P. Agriculture Association recently held its annual meeting in Escanaba and the TB issue was the focus of discussions. There will be a summary of that meeting provided during this meeting.

For more information or to register for the meeting contact the Iron County Extension office at 875-6642. The meeting is free but an estimate of how many will be attending is needed.

## a stream"

es Vanderpool, the r at Elmwood in the 1920's, icated trout fisherman. His is Cooks Run. When the of the Chicago Northwestern earned that the Elmwood r was a trout fisherman, he that Charles wire the office of the railroad and absence from the telegraph he could go out and catch

ago, the president of that the evening train from the claimed those Cooks Run ily packed in ice.

enjoyed many meals of trout. My late husband also a trout fisherman ed from his father, the art rtificial flies and lures.

ell that the U.S. Forest ins' work on the dam which should improve ooks Run and on the Paint ernal," she wrote.

-s-Alpha Vanderpool Iron River, Mich.

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# Contract renewed with Soil Conservation District

By Lynn Perry

CRYSTAL FALLS—Karla Parrott, administrator of the Iron County Conservation District (ICCD), presented her annual report to the county board during its Jan. 25 meeting.

The ICCD, she said, is in its 38<sup>th</sup> year of existence. Over the course of this time, it has been acting as a gateway for conservation programs by forming partnerships with numerous conservation groups, municipalities and other units of government. By combining these efforts, she said, the district is able to implement more programs within the county.

Upcoming ICCD actives include:

James Bond, the Iron River Watershed Project manager, will be planning future implementation sites along the Iron River and its tributaries, conducting education programs, stream clean-ups, trout structure placements, continuance of the Apple Blossom walking trail, and ongoing research into limiting acid mine drainage and contamination.

District Forester Bill Millis will continue to conduct numerous educational programs throughout the county, provide one-on-one assistance to landowners and cost-share programs, forestry, wildlife and other natural resource management. He will also be holding an apple tree-pruning workshop in April and a yard tree and street tree maintenance and pruning workshop. Last year the district sold over 66,900 trees at the annual spring tree sale.

Tom Berndt, Natural Resources Conservation Services, is working jointly with the ICCD to construct four animal waste storage facilities, three runoff water diversions, two waterways to alleviate erosion, a fuel storage facility to help prevent groundwater contamination, and two livestock exclusion and watering systems to limit livestock access to clean streams. Financial assistance for the residents partaking these projects total \$158,000. The engineering and design is being provided by the Natural Resources Conservation Service, contributing over \$31,000 in technical assistance.

**THIS YEAR, THE ICCD** will continue to work with the county Construction Code Office regarding the Soil and Sedimentation Program, Parrott said. The joint effort proved to be a valuable asset to the success

of the program which received the highest review rating from the Department of Environmental Quality.

From January through December 1999, the program issued 56 permits which contributed \$540 to the Construction Code Office. In addition, she received information regarding possible violations. Four of these sites needed to be followed up extensively.

"With much success of working together between organizations, the ICCD and Iron County initiated the agreement for the Soil and Sedimentation Program in 1999. This agreement has been amended and approved by the ICCD board and now awaits approval by the county," she concluded.

The board concurred the ICCD has done a good job, and renewed the Soil and Sedimentation contract.

**IN OTHER ACTION,** the county board:

\*Learned the former Castle Acres adult care facility is now called Boyington Place and Northpointe clients were moved in Jan. 19. The facility will employ a total of 20 people.

\*Manpower has two summer youth programs, one with 17 slots for the county, the other 22.

\*Tabled action on both the Cooks Run Fish Hatchery and adoption of the county board Rules of Order.

\*Accepted a resignation from Roger Adams from the Special Elections committee and appointed Tom Gendzwill in his place.

\*Approved a recommendation by Judge Joseph Schwedler to hire Robert Dalpra as the Iron County juvenile officer effective Jan. 24.

\*Tabled signing a three year lease with the Greater Iron County EMS for the Roy Fulfer building so attorney Joe Sartorelli could review it.

\*Approved a request by the FLA board to conduct a market study on assisted living and intergenerational day care services, at no cost to the county.

\*Approved a recommendation by the Economic Development Corporation to transfer \$5,000 from the RLF fund to the administration fund to continue the local business needs survey, and

\*Set the next bi-monthly meetings for Friday, Feb. 11 at 10 a.m. and Tuesday, Feb. 22 at 4:30 p.m.

## Local snomobiler



West Iron County High School students, and ACE High School students were recipients of recognition awards made by Bette Premo, president of the Iron River Watershed Council (left) during the organization's annual meeting Feb. 7 (Gussert photo)

## Watershed council marked a notable year

IRON RIVER—The Iron River Watershed Council, during its annual meeting Feb. 7, looked at past accomplishments and set some goals for the future.

Notable during 1999 were two grants awarded to the Iron Conservation district by the DEQ. These grants will serve to support the position of Watershed Project Manager, held by Jim Bond, who is conducting an inventory of the watershed and prioritizing needs for improvement.

WITH THE council's help, Bond is documenting the physical and chemical characteristics of sites on the river, identifying places where mitigation projects could help the river and assisting with procuring funds for those projects.

Both ACE and West Iron high school students have been involved with various watershed projects, including river clean-up, and habitat study. Their assistance was noted with recognition awards.

THE COUNCIL is actively seeking grants to extend the Apple Blossom Trail from Caspian into Iron River; improve accessibility to

the Iron River, improve the water quality and trout habitat of the river and it will support education that informs watershed residents of the importance of maintaining a healthy river system.

Officers of the Iron River Watershed Council include: President Bette Premo; Vice President, Jar Huizing; Secretary, Karla Parrott.

**REPORTER  
E-MAIL ADDRESS**

**Reporter@up.net**

### Did you know...

Michael Jordan gets more money from Nike annually than all of the Nike factory workers in Malaysia combined?



# The Drumming Log

By Ed Erickson III

## Trout Unlimited chapter has active agenda

Wed  
6/28/00

From time to time, the Old Drummer covers meetings of the Menominee Range Chapter of Trout Unlimited. On June 14, the program speaker was USFS fisheries biologist Jerry Edde of Bessemer. He explained an aggressive trout habitat improvement project slated to start Aug. 14 on Cooks Run. (See separate story.)

During the business session of the meeting, President Dave Tiller and other members explained current and upcoming projects the chapter is/will be involved in.

One of the prime trout streams in western Iron County is the Iron River. TU is represented on the Iron River Watershed Committee. Current project director Jim Bond gave an update on his research of how the Iron River can be improved.

Right now he is identifying non-point sources of pollution and suggestions on how to rectify them. He said the Iron River, "Does not have much erosion. Most of the problems are urban related. From the Homer Road Bridge to Caspian, there are a lot of storm sewer drains that run into the Iron River. We are looking at creating some outflow wetlands to filter out sediment that is creating delta's in the river. The problem areas are between Fourth Avenue and U.S. 2 bridges. There are silt delta's. Those point sources are identifiable. Non-point sources are fertilizers, pesticides, chemicals and oils. Some areas need to get some trout structures. The biggest part of this project is an educational campaign," said Bond.

"What we would like to have done, is there is a dam that should be removed on Wild River Road," said Bond.

President Tiller commented, "We must look at sediment," that will flow downstream if the dam is removed. "I don't think it is insurmountable. With grant money we could pump sediment to the side of the stream."

During a recent Trash-O-Rama project, 12 tires and three toilets were removed, along with other articles of trash, said Tiller.

He said TU, along with Purdue University and WhiteWater Associates of Amasa, studied 12 transects between Museum Drive and Brady Avenue bridges in Caspian. "We have some fairly good data for the 12 transects...it is proposed that skybooms should be put in some areas of the Iron River. That area doesn't need skybooms. The river is deep and fast. I would like some whole log structures. They are less impactful. Right now there is no source of large woody debris," said Tiller.

Tiller reported that L.L. Bean has offered a flyrod outfit for a fund-raising banquet or youth education program.

Officer Jim Sadino said the chapter is applying for a DNR/DEQ permit to continue to install trout habitat improvement structures in the South Branch of the Paint River involving West Iron County High School students this fall.

In the past, TU chapter volunteers have conducted fly fishing seminars, participated in Iron River Trash-O-Rama, removed beaver dams on the Iron River and installed many trout habitat structures on the South Branch.

Sadino reported the chapter will soon install a stairway adjacent to the South Branch near the confluence of McRae Creek as an enhancement for anglers to access the stream on a steep bank near the DNR Recreation Trail.

The local TU chapter is active and progressive. It behooves local anglers to get involved.

# Pollution still a problem

By Jim Bond, Iron River Watershed Council Project Manager  
**IRON RIVER**--Although much progress has been made over the past 15-20 years in "point-source pollution," i.e., smoke and waste water emissions, much remains to be done about "non-point source pollution."

Many of our nation's waterways, including the Iron River, are still in jeopardy. Rain and water washing over the land and through the ground eventually reaches our lakes and streams.

As this water travels over the ground, it picks up dirt, chemicals and other debris before draining into a body of water or the groundwater. This form of polluted runoff is known as non-point source pollution.

The Environmental Protection Agency has estimated this type of pollution is not the single highest cause of the deterioration of our nation's water quality.

Some of the major types of pollutants carried by non-point source pollution include:

--Pathogens, including disease causing organisms such as bacteria and viruses. These generally come from the fecal waste of humans and animals and enter the water ways from the land, as well as from improperly functioning sewers and septic tanks. Direct contact with contaminated water can result in infection and illness.

--Nutrients, are compounds which stimulate growth, like nitrogen and phosphorous. In high concentrations, they become an environmental threat. Most enter the waterways through over-fertilization of fields and lawns, and can lead to massive algae growth and oxygen deprivation in the water.

--Sediments, include sand, gravel and dirt eroded from wind and runoff. This occurs where this a poorly protected construction site, agricultural fields, roadways or eroding banks.

--Toxic contaminants, include heavy metals, pesticides and organic compounds like PCBs. These do not break down in the water and are passed on through the food chain.

--Debris, including trash such as plastic, Styrofoam, rubber and other solid waste which either starts a street litter, or is deliberately tossed into waterways.

**THE IRON RIVER** Watershed Council held its annual river clean up May 24, with participation from a number of volunteers. While total amounts of trash retrieved have not yet been totaled, it was estimated approximately 4,000 pounds of trash and debris were removed from the river.

One of the goals of the Council is to educate and inform the public of the problems of non-point source pollution and their solutions. These include awareness of how just a little debris can build up into a major source of pollution.

Residents along the Iron River Watershed can help limit the amount of pollution entering the watershed by reducing pesticide and fertilizer use; establishing buffers between waterfront property and the water; not dumping household or lawn care chemicals into the storm sewers and properly disposing of any litter including appliances, car parts and building materials.

For more information about the Iron River Watershed Council's activities, contact Bond at the Iron Conservation District Office, (906) 875-3765.



## Holiday special

Jan. 10-01

While the West Iron County and Forest Park boys basketball teams and coaches planned strategy for the second half, both schools' cheerleaders and Pom-Danz teams joined forces to present their special gift to the fans attending the Dec. 19 game at the West Iron County High School gym—a high-stepping dance number to familiar holiday music. The two schools' cheerleaders have presented similar routines at Wykon-Trojan boys' games over the last several years, and it's always a show-stopper.

## Iron River Watershed Council meets

IRON RIVER—The Iron River Watershed Council met on December 4, 2000 at the West Iron District Library.

Jim Bond, Iron River Watershed Manager, reported that he is continuing to compile information for his management plan. So far, he has taken an aerial survey of the watershed, completed a draft version of a watershed survey to be provided to the public, and has nearly completed the latest issue of the Iron River Informer.

Council member Jim Sapletal

suggested that drop off points be set up for the public to return the surveys once completed.

Council member Chalmers McGraham reported that the Apple Blossom Trail grant application is nearly completed.

Rosalie King, Iron River City Manager said she would obtain and submit a letter of support for the Apple Blossom Trail from the Consolidated City of Iron River.

Two members of the Michigan National Guard were present and made some suggestions as to how

the Council should request support and the possibility of the National Guard doing some construction and/or engineering work on the trail project.

Council member Bette Premo gave an update on the progress of the release of funds from the Dober Mine Settlement. Since there is no new news, the Council decided to address legislators to see if they would come to a Watershed Council meeting. The Council agreed that assistance from Lansing is needed to help get the funds released.

## Iron River Watershed Council

# PL566 explained

IRON RIVER—At the regular meeting of the Iron River Watershed Council, Watershed Manager Jim Bond submitted a summary of his progress on the Iron River watershed project.

Tom Berndt from the National Resource Conservation Service (formerly the Soil Conservation Service) was also present and submitted a copy of what is called a PL566 request from the Iron Conservation District.

The PL566 is a government program for watershed and flood plain protection, especially for large-scale watershed concerns.

The concern for the Iron River watershed is the amount of waste rock piled on the banks of the river.

The waste rock is scattered all over the Iron River, a result of past mining activities in Iron River, Caspian and Mineral Hills.

The waste rock produces acid and the acidic runoff has been going into the Iron River for many years. The current plan is to cap the waste rock piles and contain them on sight.

The PL566 request asks the NRCS to run a Cost/Benefit Analysis for capping the waste rock piles along the Iron River. The council unanimously voted to support the request.

Administrator Bob Gussert prepared and sent letters to the City of Iron River, Caspian, Iron River Township, Storra Enso and Shamion Brothers Logging requesting their support for the PL566 project.

Berndt stated that projects like the Iron River watershed generally take some time to be completed (usually several years).

For more information on the watershed project, call Jim Bond at 875-3765.

## Courthouse Happenings!



The Iron County Conservation District is located in the basement of the Annex. Some of you may remember it as the Iron County Soil and Water Conservation District. The change occurred a couple of years ago. On June 22, 2001, the Conservation District will begin its 40th year of existence. The Conservation District is a unit of local government that has, and continues to offer, technical and educational assistance to the residents and landowners of Iron County.

A five member Board of Directors governs the policies and programs of the Conservation District. The Board consists of Jim Shepich, Z. Dale Carlson, Mike Brzozowski, Matthew Suheski and Dave Tiller. The Board holds its monthly meeting on the third Tuesday of every month in the Courthouse Annex basement at 7 p.m. They also hold their Annual Meeting in October. All meetings are open to the public.

One of the most well known programs that the Iron County Conservation District operates is its Annual Spring Seedling Sale. The sale has a focus toward native species of the region, and specializes in plants that benefit the land and the wildlife that live on it.

In reviewing the 2001 Spring Seedling Sale brochure, one is immediately drawn to the changes this year. There are a larger variety of items for sale including native plants, vines, shrubs, aquatic plants and more! If you haven't already received a brochure, and would like to obtain one, please call 875-3765. Keep in mind that April 1, is the last day that orders will be taken. All proceeds go toward supporting the district and its county wide programs.

Bob Gussert, District Administrator, runs the day-to-day operations of the Conservation District. His duties include doing the finances, payroll, running the seedling sale, administering the Iron River Watershed Project, promoting the District through educational programs and enforcing the Soil and Sedimentation Control Program.

A Soil Erosion and Sedimentation Control Permit is required for any earth disturbing construction activities that are within 500 feet of a lake or stream or larger than one acre in size. Certain activities are exempt from having a permit, so please contact the office with any questions. The "Soil and Sed" program (Part 9) is mandated by the State of Michigan, but enforced on the county level.

Also sharing office space is Bill Millis. He manages the Conservation District Forestry and Wildlife Program. He is available to work with property owners in Baraga, Dickinson and Iron Counties. One of the primary focuses of his job is to provide information and assistance to non-industrial private landowners. Working with them to better protect, utilize and plan the management of their property. The assistance provided by Millis is free to private landowners, nonprofit organizations and schools of these three counties.

Some of the services available are advice on wildlife and timber management, tree planting and harvesting information, sample timber sale contracts, forest insect and pest identification, yard tree care information and most important, an on-site visit to provide land management advice and suggestions specific to your property.

Jim Bond, likewise, works out of the Conservation District Office. He is the Iron River Watershed Project Manager. The Iron River Watershed Project is funded by a



**IRON CONSERVATION DISTRICT STAFF** members include (L-R) Jim Bond of Iron River, Watershed Project Manager; Bob Gussert of Quinnesec, Administrator; and Bill Millis of Crystal Falls, Forestry and Wildlife Programs.

## County Board Meeting

(Continued from Front pg.)

rate required to retire the bonds is .53 mills (53 cents per \$1,000 of taxable value). It has been estimated that it will take 30 years to pay for the renovations at the Courthouse and retire the bonds.

The IC Courthouse Complex Renovations and Improvement Project will be done in six phases.

>Phase 1: Accessibility improvements to Courthouse and Annex.

>Phase 2: Life safety, HVAC, lighting and maintenance improvements.

>Phase 3: Exterior improvements on Courthouse and Annex.

>Phase 4: Interior improvements on Courthouse and Annex.

>Phase 5: Site work improvements.

>Phase 6: Jail and County Office Building improvements.

The County Board also approved a resolution declaring intent to reimburse for expenditures and authorizing filling with the Treasury. This resolution was neces-

machine out on bids, with minimum bids set at \$750.

>Board approval was given to the Sundberg Carlson proposal on the IC Fairgrounds Rotunda re-roofing Project. The fee proposed was \$8,300 plus reimbursable expenses.

>Board approval was given to the request of Sandra Toivonen, Prosecuting Attorney's Administrative Assistant for maternity medical leave of absence on approximately June 1 through Sept. 4.

>Board approval was given to the IC Parks and Recreation Plan revisions as submitted by Administrator Huizing.

>County Board approval was given for a resolution of recognition for Erich Ziegler for his excelling himself as a team player and as an individual for winning the men's Michigan High School cross country skiing championship. Chairman Harrington noted the certificate of recognition will be presented to him at the Michigan Week Banquet.

>Board approval was also given to appear with the Al-

important, an on-site visit to provide land management advice and suggestions specific to your property.

Jim Bond, likewise, works out of the Conservation District Office. He is the Iron River Watershed Project Manager. The Iron River Watershed Project is funded by a grant. The Iron County Conservation District, together with the Iron River Watershed Council (acting as a steering committee), oversees the watershed project.

The Watershed Council was formed in 1997, by concerned citizens of Iron County who felt an obligation to work to preserve, protect and promote the Iron River. The grant that was acquired from the DEQ is being used to inventory the characteristics of the watershed, to locate critical areas throughout the watershed, to develop potential solutions to remedy these problems, and to inform and educate the public on the Iron River and its concerns. The Iron River Watershed Council meets the first Monday of every month at the West Iron District Library at 1 p.m., and the meeting is open to the public.

Jim Bond has spent much of his time trying to identify potential or current sources of contamination. He had walked or canoed much of the Iron River as well as the creeks and lakes which eventually flow into it.

Did you know that there are 38 miles of streams that comprise the Iron River of which twelve and one half have been designated by the DNR as blue ribbon trout waters? It should come to no surprise that the Iron River is a truly valuable resource for both the residents of Iron County and the State of Michigan and may be one of the finest Brook Trout Streams in the Upper Peninsula.

While there has been much work done to improve the health of the Iron River, there are still problems that exist which threaten the condition of the watershed. The Conservation District is currently awaiting the approval of two additional grants to help improve water quality and increase public awareness. The Iron River is an asset, which has yet to reach its potential, and fortunately, there are many people working hard to ensure that this river and its watershed receive the attention it deserves.

The Iron Conservation District is fortunate to have such a qualified group providing technical and a variety of educational programs for schools as well as the public in general. They look forward to serving your conservation needs and can be contacted by calling 875-3765 or stop by their office.

We are very pleased to announce that the first 25 Iron County Courthouse Circa 1890 prints have arrived. Artist Bertha Kantola Johnson has numbered and signed each of these prints. The money generated from the print sale will be used strictly for Courthouse restoration. Stop by the Courthouse and see this historical rendition of the Courthouse!

Items are continuing to come in for the 2000 Time Capsule. We also have one new corporate sponsor, Jim Tarsi, owner of U.P. Office Equipment Systems.

We are offering for bid a 1994 Gestetner 5305 Copy Printer. This is a high volume/low cost means of printing. Anyone interested in details on this copy printer can contact Sue at 875-3301.

As always, we are here to serve you!

## CRYSTAL FALLS LIONS CLUB



*Citizen of the Year Nomination*

(Deadline is March 31, 2001)

I nominate \_\_\_\_\_  
as 2001 "Citizen of the Year." Included with this nomination is a summary of the achievements of the person being nominated.

proved a resolution declaring intent to reimburse for expenditures and authorizing filling with the Treasury. This resolution was necessary to receive a State of Michigan Treasury order to issue the bonds and also to satisfy a Federal tax law requirement for municipal bonds.

County Board approval was also given to a resolution to an increase in Resident Camper Rates at Pentoga Park, to allow for uniform rates at the park. The resolution authorized a \$3.50 per day resident camping rate fee increase, which totals \$12 per day and provides the same daily camping rate for both resident and non resident campers in the 2001 fiscal year. Board approval was given with a 4-1 vote (Malmquist casting the no vote).

It was noted the fee increase covers the increased operating costs and provides the fiscal means to finance improved and expanded facilities as recommended by the Parks Director and the Five Year Iron County Parks and Recreation Plan.

The County Board decided to go with the Busanet Computers for the County computer maintenance and upgrades, as presented at the Feb. 6 meeting. The Board approval complete Busanet proposal with a vote of 5-0.

Other action items at the meeting included the following.

>Board approval given to the release of Cobo Hall monies from Trust & Agency, with \$19,941.35 to WUP-SACA and \$19,941.35 to General Fund Revenues.

>Board approval was given to put the Gestetner Copy

noted the certificate of recognition will be presented to him at the Michigan Week Banquet.

>Board approval was also given to concur with the Allegan County resolution on stable revenue sources for airport infrastructure.

More on the County Board meeting will following in the next issue.

*Crystal View*

# For all fut

Traditional. Roth. Ed

## Class of 2001

(Continued from Front pg.)

first reading of the following policy changes and an amendment to Policy number 1240 - review of superintendent. Compensation; conflict of interest (#0144.3 & #1130); organizational meeting; special meetings; agenda; open meeting; school to work program; district sponsored clubs; driver education; student assessment; annual education report; drug free work place (#3122.01 & #4122.01); staff discipline (#3139 & #4139); probationary teachers; dan.



## First

125 SUPERIO  
P.O. BOX  
CRYSTAL FALLS

April 18, 2001

# WOLVES

## Wolves linked to deer feeding

of  
me to  
?

need protection and so are listed as an endangered species.

However, in Michigan, the wolf, in all likelihood, will be downlisted soon to threatened instead of endangered.

Hammill thinks this is a good thing. "I hope someday they can be harvested." Downlisting will allow the wolves to be controlled through lethal means by government agencies, not by private citizens.

Presently, problem wolves, i.e. wolves that kill cattle or act more bold than usual must be translocated, moving the problem from one place to another. If the wolf is downlisted, problem animals can be 'dispatched'.

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## Fly casting

Local fly casting expert, Jack Sherman, gave Rose Westman of Iron River some tips for casting flies at the Trout Fishing Workshop held at the West Iron County High School gymnasium on Tuesday, April 10. In addition to fly casting, participants had the opportunity to learn the basics of fishing knots and fly tying. There was plenty of expert advice on trout fishing gear and experts on hand to talk about stream ecology, stream restoration and the Iron River Watershed.

## Lessons to learn

By Bill Michigan State Extension

Sometimes you know how important something is, but you don't know how to do it until you have it gone, or until you have it and that doesn't have it any more.

Recently, I spoke at a meeting in Holland, Michigan. It is a town with a fascinating history. But Holland has lost much of its forest.

BY CONTRAST, Michigan's forest-rich region has lost much of its ability for the benefit of human beings. We are losing more wood products, and our forests are being compromised. Maybe we should import just about everything from the U.P.!

Oddly, the quality of life for our friends most often is determined by you live in a wood-

# Watershed survey results reviewed

By Jim Bond  
Iron River Watershed  
Project Manager

A couple of months ago, in order to gauge the awareness of the community on watershed issues, residents of the Iron River area were asked to fill out a survey. The survey was distributed through ACE High School, West Iron County High School, and the Reporter. By filling out a survey, watershed residents were able to convey their level of understanding about the watershed project and its issues, as well as have an opportunity to comment about the project.

A survey like the one you were asked to fill but is useful in a number of ways. First of all, the answers to the survey help to give us a benchmark to compare with in the future. Using surveys is a good method to rate success of awareness and understanding. Hopefully, when we repeat this survey again later, the numbers of people who are familiar with the watershed project will increase. If not it will tell us that we need to reassess our information and education strategies.

**ADDITIONALLY**, surveys give the public an opportunity to voice their opinion. Consequently, surveys often surface new ideas or ways of thinking which may have been overlooked before. Getting input from all those who live and work throughout the watershed helps keep perspective on which issues are the most important to the community.

Equally important, a survey by itself works as a promotional tool. By reading the survey one automatically

becomes aware of the project and it forces the reader to think about what issues face the watershed. Even if someone doesn't take the time to fill one out, by simply reading the survey an introduction has been made from which we can build our information and education efforts.

**IN ALL**, we received approximately 130 responses to the survey. Some were from students, some were from parents, and others came from both full-time and part-time residents of Iron County. Of those who responded to the survey, 53 percent said they were familiar with the land area that drains into the Iron River, 55 percent stated that they were familiar with the term watershed, and almost half (49 percent) of the people who responded said that they have heard of the Iron River Watershed Project. More results from the survey are as follows:

-Fishing was tallied as the primary activity with regard to the Iron River Watershed.

-The improvements that people would most like to see with the watershed are the enhancement of natural areas for habitat, and a restored cold water fishery.

-About 60 percent of the people rated the quality of the watershed as good, compared to a 31 percent ranking of fair, and 7 percent and 2 percent rankings of excellent and poor respectively.

-Compared to ten years ago, public opinion states that fishing and water quality has gotten better, but that littering and dumping of trash have gotten worse.

-Primary pollutants of concern

are oil, grease, and metals.

-Many people are willing to volunteer their time to the watershed project to contribute to its success.

Aside from checking boxes and ranking choices there were also a number of areas in the survey where respondents could write down comments and opinions. One of the main questions people responded to asked what they thought the major obstacles to achieving improvements were. Many of the answers to that question pointed to lack of interest and knowledge about the project. While we have made some attempts at disseminating information, we do plan on intensifying the education and information strategies over the next few years to make knowledge more available. Hopefully, interest in protecting the Iron River will naturally rise with an increase in awareness.

**ANOTHER MAJOR** obstacle survey takers decided upon was lack of funding. While it isn't always easy to procure financial support for activities such as the Iron River Watershed Project there are many opportunities in the form of grants available. This past summer we applied for two major grants and if all goes well, we should have money to support some major implementation and information/education activities through the next three years.

I would like to personally thank all of you who participated in the survey. Your help and interest is invaluable to making the Iron River Watershed Project a success. Watch the Reporter for upcoming news and progress regarding the project.

The garden corner...

Send your outdoor

# Grants approved for Watershed Council

By Joe Speno

IRON RIVER— Jim Bond, Iron River Watershed Council project manager, announced that the two major grants he had applied for have been approved for payment to the Council. The announcement was made during the monthly council meeting on June 4.

**THE CMI** (Clean Michigan Initiative) Grant totaling over \$580,000 will be used for the actual physical improvements for designated problem areas of the Iron River. The 319 Grant totaling approximately \$200,000 will be used for public education and information.

He also stated that the project has been awarded a settlement from the Dover mine problems. This settlement award will be used for matching funds for the project.

**THE MEETING CONTINUED** with a wrap-up discussion of the Iron River clean-up day. Jan Huizing, Watershed Council vice-president pointed out that the 10,000 pounds of garbage removed from the river this year was a significant increase from last year's 4,000 lbs.

***"We had excellent crews. They weren't afraid to get wet. They were good strong teams with excellent co-operation and leadership."***

***Polich***

It was pointed out that the increase could be attributed to bigger and better crews. George Polich emphasized "We had excellent crews. They weren't afraid to get wet. They are good strong teams with excellent co-operation and leadership." He added that wherever the river is accessible to people those "sections looked like wastelands."

The efforts of one of the clean-up crews were delayed because the council's boat had been vandalized. Boats had been punched in the bottom. Leaders scrambled to make repairs on the much-needed craft. Boats are used as collection vehicles pile up the garbage as the crew collects it.

**ACE HIGH SCHOOL** students were in attendance along with the teacher Tony Petitjean. Each student gave a progress report of his or her individual projects that are integral parts of the Watershed Project.

Bob Gussert, Secretary-Treasurer of the Council, thanked all of the Ace students for their involvement and everything that they have done. Everyone present whole-heartedly agreed.

Petitjean added that no matter what the project needs the Ace students would gladly help with the labor efforts.

**TO FURTHER ENHANCE** the adopt-a-river clean-up project Polich suggested that the Iron River tributaries should be cleaned this fall when water levels are lower. The council agreed to investigate further.

Bond added that the main problem of contamination in the river is still sediment and run-off. In late discussions with him he pointed out that some remediation has already been started to rectify the problem in a joint co-operative effort between state agencies and local businesses.

Some of the first physical improvements to be made in the river this summer will be to help with the sediment problem. These projects will be started as soon as the Council actually receives the funds from the grants.

**ANOTHER ISSUE** discussed was the problem of silt fences that were installed during construction projects but never removed. Initially placed to protect the environment, if not removed at the proper time they can pose and add problems.

Beth Rogers commented about the silt fences that as the disturbed area starts to come back "They can have a bad effect ecologically. Amphibians, reptiles, and small animals have difficulty."

Upon conclusion the council agreed to begin writing letters to the appropriate state agencies that have responsibility and jurisdiction over these fences.

**THE IRON RIVER** Watershed Council welcomes and invites comments, suggestions, information about possible problem areas, and participation from all Watershed area residents. For further information Jim Bond, project manager, can be reached at 906-875-3765.

# Sound lawn care means healthy waterways

By Jim Bond  
Project Manager

**Iron River Watershed Council**  
CRYSTAL FALLS—The Buzz on Lawn Care. For many of us, summer means getting out and taking care of our beautiful lawns and gardens. But did you know that how we take care of our yards can affect our lakes and rivers?

Landowners who have waterfront property are often significant contributors to altering the conditions of the water. Although we all like to maintain healthy looking yards, sometimes by trying too hard to keep the lawn lush and green we end up hurting the lake or river which was the very reason we chose that property in the first place.

Our culture is used to short cut grass as the definition for a yard. Often, in trying to maintain that idea, waterfront landowners mow right to the waters edge. However, in doing so landowners unknowingly remove an important component to that ecosystem.

**TALL GRASSES**, shrubs, and other types of vegetation along the shoreline act as a buffer. The buffer plays an important role in protecting the lake or stream from contaminants which may otherwise impact the water. By removing the buffer, the waterbody loses this defense and therefore becomes more susceptible to pollutants.

To make matters worse, in the pursuit to have a healthy lawn people unknowingly often over fertilize. With the lack of the buffer, the excess fertilizer often gets washed off the lawn and into the water during rain events. This can then lead to excess vegetation and algae growth, a problem which is especially noticeable in lakes. The overabundance of plant life can impact fish populations, hamper recreational activities such as swimming or boating, and decrease the overall enjoyment of the water. Likewise, grass clippings left on the lawn that are washed into the water can act in much the same way as excess fertilizer.

## Battan places in Laona horse pull contest

LAONA, Wis.—The Camp 5 Museum and Lumberjack Special steam train announced the winners of its annual Horse Pull Contest held June 30.

Northwoods logging camps often

**ADDITIONALLY**, some waterfront owners who remove their buffers wind up losing some of their shoreline as well. Buffers help to diminish the erosive impact that waves have on a shoreline. In particular, lakes that have a lot of boat activity on them are especially susceptible to the loss of shoreline due to wave action.

**THE EASIEST** way to protect against these things is to retain or re-establish your buffer. Frequently, landowners who have waterfront property do not utilize the entire length of shoreline for their activities. If you think this is the case for your situation, determine how much of the shoreline you really need for your activities.

Perhaps you only use a small area around a boat landing or fishing platform, or maybe you use half of your shoreline for a swimming area. Whatever the case may be, leaving some buffer between your backyard and the water can be an effective way to protect both the lake and your investment.

Additionally, those who frequently use a fertilizer for their lawns and gardens may consider having their soil tested to determine how much fertilizer to apply. Your local MSU Extension agent can help you choose the best type of fertilizer for your lawn and how often to use it.

**AS YOU** can see, there are many advantages to managing your waterfront with buffers. Water quality, recreation, and property values can all be influenced by properly managing our land. One final benefit that you might find however directly affects you, the landowner. By applying less fertilizer and mowing less area you can save money and have less work to do!

For those who are interested, the Dickinson Conservation District will be conducting a Landscaping for Water Quality Workshop, Saturday, July 21, which will discuss many of these topics in much greater detail. For more information you can call Stacy Cotey at (906) 774-8441 or Jim Bond at (906) 875-3765.

## Sporting Clay UP Championships July 12-15

IRON RIVER—This year's UP Sporting Clay Championships will be held July 12-15 at Brule Sporting

THE MENOMINEE RANGE CHAPTER OF TROUT UNLIMITED INVITES YOU  
TO AN EVENING OF APPRECIATION OF TROUT, THEIR ENVIRONS, AND METHODS OF PURSUIT

# Trout Fishing

## WORKSHOP

**FREE ADMISSION!**

CHOOSE YOUR FAVORITE TOPIC! WORKSHOP STATIONS WILL PRESENT A HUGE VARIETY OF INFORMATION AND YOU CAN VISIT ANY STATION AT ANY TIME.

**Fly Casting-** Rods and the space to cast will be available for anyone wishing to learn the basics or try some more specialized techniques. Learn from local experts.

**Fishing Knots-** There are only a few essential knots. Don't be intimidated. How does the leader attach to the line? Tippet to fly? What is a dropper?

**Trout Fishing Gear-** Vests, Fly boxes, lanyards, line clippers, surgical pliers, creels, nets, etc. Helpful hints/Inexpensive solutions

**Antique/Collector Items-** Rods, Reels, etc. If you have an item you wish to show or discuss, bring it.

**Meet the Iron River Watershed Manager-** See the information that has been collected. Discuss your views on the Iron River.

**Stream Ecology-** There is more to a stream than water. What do trout eat? When & Why & Where: All things are connected.

**Fly Tying Demonstrations-** by one of the leading fly tyer's in the midwest. Talented and prolific, Arlen Sunn creates workable art with thread, bits of hair, feathers, and a hook.

**Stream Restoration-** Techniques & structures. No stream can be separated from its riparian connections.

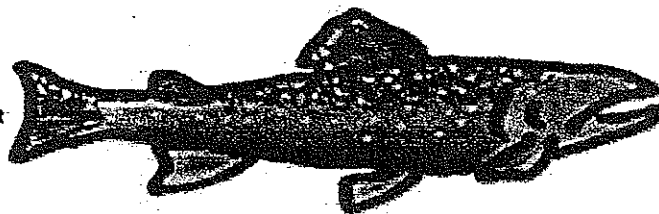
**Virtual Fly Fishing Games -** Try to catch a big one!

**Brook Trout and other fish carvings by Harley Ragan.**

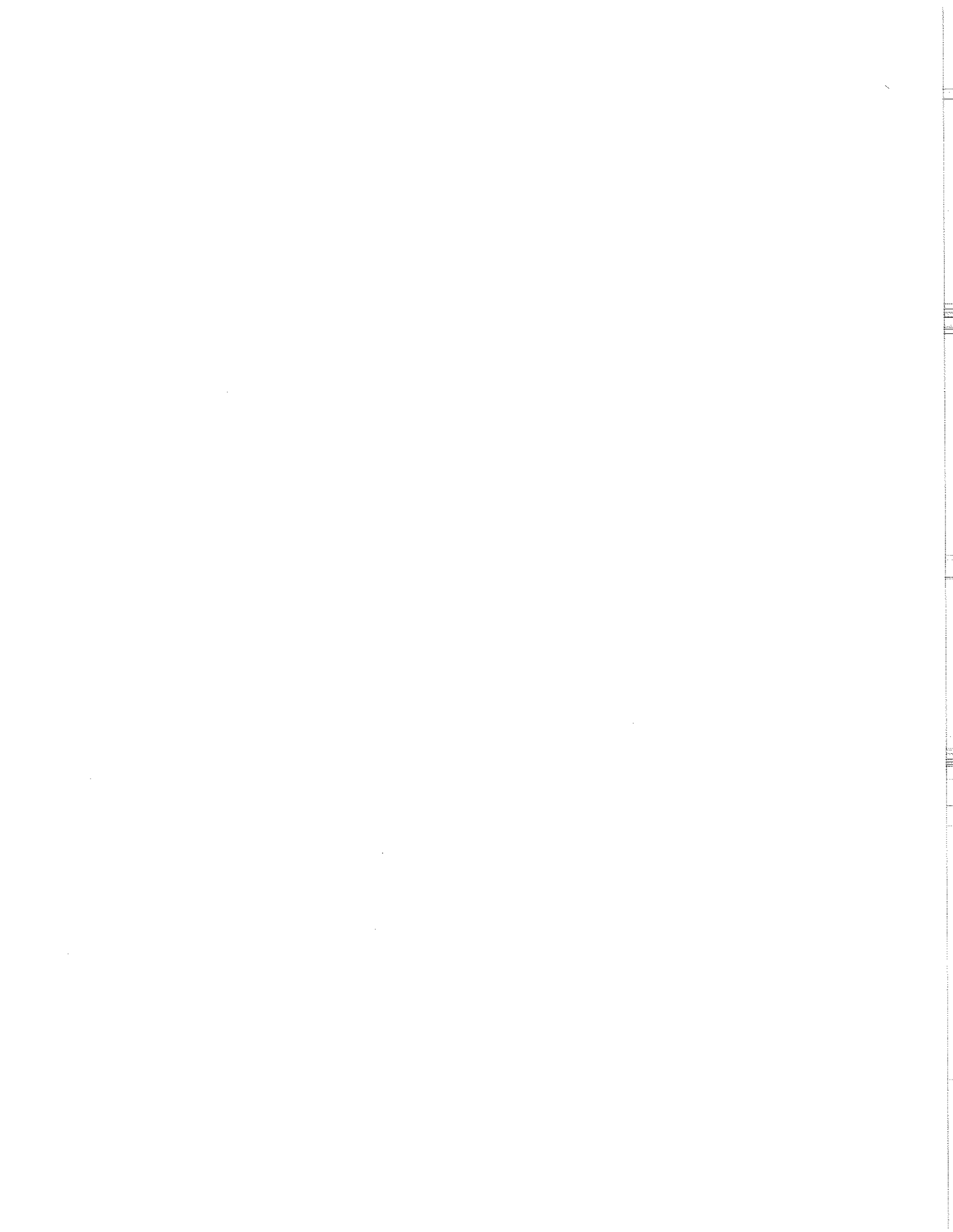
**PRIZES!**

**TUESDAY APRIL 10, 2001 @ 6:30  
WEST IRON COUNTY HIGH SCHOOL GYMNASIUM**

The loveliest of all coldwater fish  
*Salvelinus fontinalis* the Brook Trout  
Our native trout



Protect  
&  
Restore



# Iron River Informer

Vol. II, Issue I

March 2007

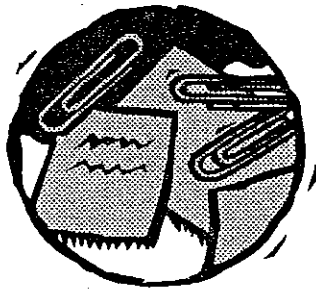
## Survey Says . . .

### What It's All About

This winter, in order to gauge the awareness of the Iron River community on watershed issues, residents of the area were asked to fill out a survey. The survey was distributed through West Iron High School, Ace High School, and The Iron County Reporter. The purpose of the survey was to gather information on how familiar the residents of the watershed are with the project and the problems the Iron River faces, as well as allow for people to comment on the project.

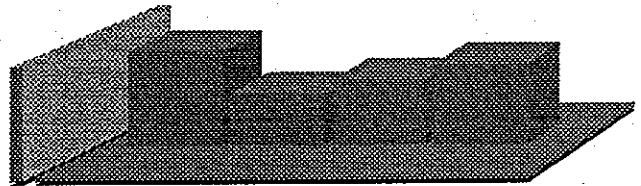
Conducting a survey like this one is helpful for a number of reasons. First of all, the survey helps to give us a benchmark to compare with in the future. Using surveys is a good method to rate success of awareness and understanding. Hopefully, when we repeat this survey again in the future, the numbers of people who are familiar with the watershed project will increase. If not it will tell us that we need to reassess our information and education activities.

Additionally, surveys give the public an opportunity to voice their opinion. Consequently, surveys often surface new ideas or ways of thinking which may have been overlooked before. It is very important that projects such as these do not become narrow



minded. Getting input from all those who live and work throughout the watershed helps keep perspective on which issues are the most important.

Perhaps most significant, a survey by itself works as a promotion tool. By reading the survey you automatically become aware of the project and it forces you to think about what



issues face the watershed. Even if someone doesn't take the time to fill one out, by simply reading the survey the first introduction to the project has been made from which we can build our information and education efforts.

### The Voice of the People

In all we received approximately 130 responses to the survey. Some were from students, some were from parents, and others came from both full-time and part-time residents of Iron County. Of those who responded to the survey 53% said they were familiar with the land area that drains into the Iron River, 55% stated that they were familiar with the term watershed, and almost half (49%) of the people who responded said they had heard of the Iron River Watershed Project. Other results from the survey are as follows:

Fishing was tallied as the primary activity with regard to the Iron River Watershed.

Groundwater quality, preservation for wildlife habitat/ natural area enjoyment, and surface water quality are respectively the top three priorities for the watershed according to the respondents.

About 60% of the people rated the quality of the watershed as good, compared to a 31% ranking of fair, and 7% and 2% rankings of excellent and poor respectively.



Compared to ten years ago, public opinion states that fishing and water quality has gotten better, but that littering and dumping of trash have gotten worse.

The pollutants of most concern to those who answered the survey are oil, grease, and metals.

The improvements that people would most like to see with the watershed are the enhancement of natural areas for habitat, and a restored cold water fishery.



Lastly, a majority of the people who filled out the survey said that they would be willing to participate in the project by volunteering in stream clean ups and monitoring.

### What Do You Think?

Aside from checking boxes and ranking choices there were also a number of areas in the survey where respondents could write down comments and opinions. One of the main questions people responded to asked

what they thought the major obstacles to achieving improvements were. Many of the answers to that questions pointed to lack of interest and knowledge about the project. While we have made some attempts at disseminating information, we do plan on intensifying the education and information strategies over the next few years to make knowledge more available. Hopefully, interest in protecting the Iron River will naturally rise with an increase in awareness. Another major obstacle survey takers decided upon was lack of funding. While it isn't always easy to procure financial support for activities such as the Iron River Watershed Project there are many opportunities in the form of grants available. This past summer we applied for two major grants which if approved will fund our activities into the future. [By the time the next newsletter comes out I anticipate being able to report on the status of those grant applications. If all goes well, we should have money to support some major implementation and information/education activities through the next three years.

*In the near future I hope to report on the status of those grant applications.*



### Want to Help???

A watershed project cannot be fully successful without the support and cooperation of those who live in and along the watershed. If you would like to attend a monthly Iron River Watershed Council meeting, or would like more information about the survey or project in general please feel free to contact the project manager, Jim Bond, at 906-875-3765 for more information. Thank you for your support!

# Iron River Informer

Vol. II, Issue II

June 2001

## Signs Of Summer

### Annual River Cleanup

It is finally here, summertime in the upper peninsula! Perhaps a reason many of us are able to endure the long, cold winters is the prospect of getting outdoors and enjoying the northwoods. Whether it be bird watching, hiking, or hooking a "keeper", summer in the U.P. affords ample opportunities to get outside and enjoy the long days.

Recreating, however, is not the only activity that takes place when the weather is nice. On May 29th, the Iron River Watershed Council, along with ACE High School students and the West Iron County High School Forestry Club participated in the annual Adopt-A-River cleanup on the Iron River.

Approximately 40 students and 10 adults were on hand to remove trash from the river. The participants were divided into teams who were

responsible for specific stretches of the river. The area which the volunteers worked on spanned from Homer Road in the city of Iron River, downstream to the 424 bridge in Caspian.

All told, cleanup participants removed roughly 5 tons of garbage! Tires, bed springs, bicycles, cabinetry, road signs, living room furniture, and a refrigerator were among some of the larger items removed. The junk was then delivered to one of two drop off points were the



cities of Iron River and Caspian could then transport them to more suitable disposal locations.

Each year the Adopt-A-River Iron River cleanup does a fantastic job of removing unnatural items and restoring habitat. Unfortunately, it seems there is no lack of garbage to remove.

Although I believe more and more people are becoming aware of the importance of the Iron River, and that generally things are improving, there are still those who view the river as nothing more than a dark hole to dump their waste in.

Only by continuing our efforts to improve the river, and repeating our messages, can we expect people to change their actions. In the meantime, we all need to work together to better our area. If you know of people who dump garbage in the river, tell them to stop. Let them know what a great brook trout stream the Iron River is and why it is important to maintain it as such. Also, if you see small pieces of debris near the stream (ie, blue plastic worm containers) while you are out walking or fishing, pick it up and dispose of it properly. The less trash people see, the less likely people will be to litter.

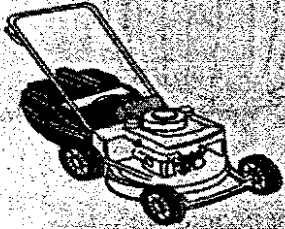
Until everyone stops dumping their trash in the river we will need to be diligent in our efforts to keep our streams clean. Whether we are getting wet during a river cleanup, or simply reminding people of the importance of the Iron River, we can all play a part in improving our watersheds.



## The Buzz on Lawn Care

**S**ummer also means getting out and taking care of our beautiful lawns and gardens. But did you know that how we take care of our yards can affect our lakes and rivers?

Landowners who have waterfront property are often significant contributors to altering the conditions of the water. Although we all like to maintain healthy looking yards, sometimes by trying to hard to keep the lawn lush and green we end up hurting the lake or river which was the very reason we chose that property in the first place.



Our culture is used short cut grass as the definition for a yard. Often, in trying to maintain that idea, waterfront landowners mow right to the waters edge. However, in doing so landowners unknowingly remove an important component to that ecosystem.

Tall grasses, shrubs, and other types of vegetation along the shoreline act as a buffer. The buffer plays an important role in protecting the lake or stream from contaminants which may otherwise impact the water. By removing the buffer, the waterbody loses this defense and therefore becomes more susceptible to pollutants.

To make matters worse, in the pursuit to have a healthy lawn people unknowingly often over fertilize. With the lack of the buffer, the excess fertilizer often gets washed off the lawn and into the water during rain events. This can then lead to excess vegetation and algal growth, a problem which is especially noticeable in lakes. The overabundance of plant life can impact fish populations, hamper recreational activities such as swimming or boating, and decrease the overall enjoyment of the water. Likewise, grass clippings left on the lawn which are washed into the water can act in much the same way as excess fertilizer.



Additionally, some waterfront owners who remove their buffers wind up losing some of their shoreline as well. Buffers help to diminish the erosive impact that waves have on a shoreline. In particular, lakes which have a lot of boat activity on them are especially susceptible to the loss of shoreline due to wave action.

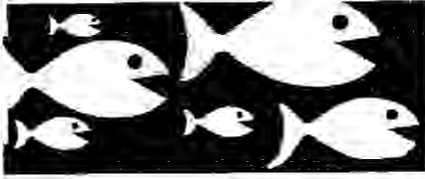
The easiest way to protect against these things is to retain or reestablish your buffer. Frequently, landowners who have waterfront property do not utilize the entire length of shoreline for their activities. If you think this is the case for your situation, determine how much of the shoreline you really need for your activities. Perhaps you only use a small area around a boat landing or fishing platform, or maybe you use half of your shoreline for a swimming area. Whatever the case may be, leaving some buffer between your backyard and the water can be an effective way to protect both the lake and your investment.

Additionally, those who frequently use a fertilizer for their lawns and gardens may consider having their soil tested to determine how much fertilizer to apply. Your local MSU Extension agent can help you choose the best type of fertilizer to use for your lawn and how often to use it.

As you can see, there are many advantages to managing your waterfront with buffers. Water quality, recreation, and property values can all be influenced by properly managing our land. One final benefit that you might find however directly affects you, the landowner. By applying less fertilizer and mowing less area you can save money and have less work to do!

For those who are interested, the Dickinson Conservation District will be conducting a Landscaping for Water Quality Workshop, Saturday, July 21 which will discuss many of these topics in much greater detail. For more information you can call Stacy Cotey at (906) 774-8441 or Jim Bond at (906) 875-3765.





# The Iron River Informer

**The Iron River Watershed Project – sponsored by the Iron Conservation District**

Jim Bond, Project Manager

Courthouse, Suite 15, Crystal Falls, MI 49920

September, 1999

Vol. 1, Issue 1

## New Watershed Project for Iron County

The Iron River Watershed Project is an endeavor created by interested members of the Iron County community with the goal of reclaiming the Iron River from the effects of years of misuse. Historically, the area in and around the Iron River was coveted for the abundance of iron ore and timber. The river played a large role in the success of that time with little or no awareness to the detrimental effects that occurred.

In November of 1996, a council was founded by those who live within the Iron River watershed who share a common interest in it's well being. These concerned individuals recognized the role that the river has as an important component to the economy, health, and livelihood



of the area and began a process to protect and preserve the Iron River and it's resources. Through their continued efforts, the Iron River Watershed Project began on June 7, 1999 under a planning grant from the Michigan Department of Environmental Quality. Over the next two years, actions will be taken on the Iron River to identify and measure sources of sediment and contaminants to the watershed and develop a management plan to restore those areas of the streams which have contributed to lowering water quality, and to maintain the overall excellence of the watershed, as well as preserving the Iron River and it's tributaries as premier cold water trout habitat.

## Jim Bond, Project Manager

In June of this year, Jim Bond was hired as project manager to oversee the Watershed Project. Jim is a graduate of Augustana College (Rock Island, IL) where he received a BA majoring in Biology and concentrating in environmental studies. Working with the Watershed Council, Jim will spend a substantial amount of time in the watershed completing field inventories to assess the current sediment and pollutant contributions to the watershed. The information gathered would be used to define critical areas that may be selected for Best Management Practices (BMPs) during the implementation phase of the project. One of the goals of the Iron River Watershed Project is to locate those areas or practices of the watershed which degrade the health of the streams through erosion, sewer overflow, or mine seepage.

An equally important component of the project will be educating the public on issues concerning the watershed. Jim will also conduct an awareness campaign to inform the community of the purpose of the project and the benefits of clean water in general. This campaign will be launched through community organization meetings, newsletters and informational brochures, and visits with area students both in the classroom and in the field. The students will be encouraged to participate in the field studies and water quality studies in order to both educate them on environmental issues and increase their awareness and appreciation for the Iron River.



The first two years of the project will focus

mainly on gathering data and the information/education campaign. After that time a new grant proposal will be written to extend funding and begin the implementation phase of the project, based on the findings from the previous two years. As with any watershed project, the success of the Iron River Watershed Project is dependent on the interest the community has in helping it to work. With this in mind, the Iron River Watershed Project looks to be very promising. The formation of the Watershed Council and the beginning of the project show an obvious commitment to the land and the community. Currently, the Watershed Council continues to improve the urban areas of the river with plans for more walking trails, stream clean ups, and fishing access sites. Coupled with the Watershed Project itself, the Iron River Watershed promises to be a stable and treasured resource in Iron County.

### Blue Ribbon Trout Stream

The Iron River has been recognized as one of the finest Brook trout streams in the U.P. and over twelve miles of the river have been classified as blue ribbon trout water. Brook trout are a classic cold-water species. The range of temperature for which Brook trout can survive is from 32 to 72 degrees F but their optimal temperature range for growth and survival is between 55 to 65 degrees F. The Brook trout's preference to cold clear streams can help serve as an indicator to stream health. As contaminants and sediments enter a stream, they cloud the water, helping to increase the water temperature. Also, as sand and silt deposits over rocky stream bottoms, it covers necessary habitat for aquatic insects that serve as the trout's main diet, as well as covering spawning beds vital to trout reproduction. If Brook trout disappear from a stream it is a sure sign of degrading water quality.



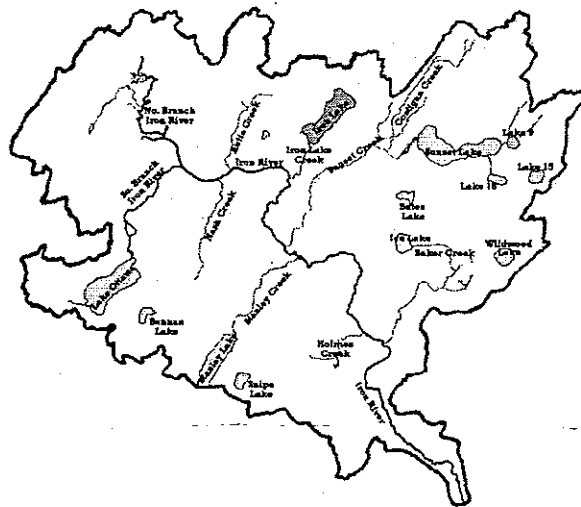
The Brook trout of the Iron River watershed are a unique and special component to the ecology of the area. Their ability to survive in spite of past and current impacts serves as a testament to the endurance of the fish. However, without foresight and responsibility the risk of losing the Brook trout remains. The Iron River Watershed Project, with it's task of improving water quality,

likewise has the goal of restoring the Iron River to a strong and stable habitat and maintaining it for the Brook trout to live in.

### Where is the "Iron River Watershed"?

A watershed is the entire geographic area that contributes both surface and groundwater to a particular lake or stream. The Iron River Watershed is located in southwest Iron County, Michigan. The Iron River Watershed consists of 38 miles of streams (including 12.5 miles of blue-ribbon trout stream) draining 61,445 acres. It includes: the Iron River, Ottawa, Iron, Sunset, Stanley, and Ice Lakes; and several creeks which include Nash, Autio, Sunset, Stanley, Holmes and Baker to name a few.

Approximately 60% of the total population of Iron County live in the watershed. The watershed includes parts of the following municipalities: the cities of Iron River, Caspian, Gaastra and Stambaugh, and the townships of Iron River, Bates and Stambaugh.



### Want to Help?????

A watershed project cannot be fully successful without the support and cooperation of those who live in and around the watershed. If you are aware of possible critical areas in and along the river such as erosion sites, sediment discharge points or sewer overflows, please feel free to contact the project manager so that plans can be developed to address these concerns. What we do to the river we do to ourselves and our neighbors. Help us make this project a successful one!!!!

# Iron River Informer

Vol. 1, Issue II

December 1999

## What's In An Inventory?

### The Beginning of a Project

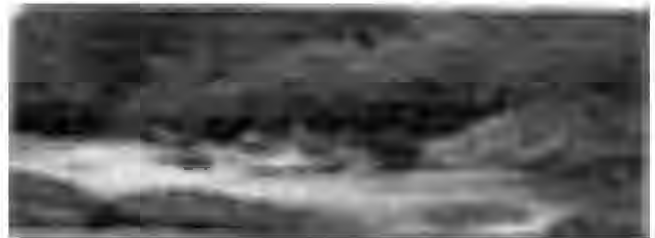
One of the hardest aspects of designing a watershed project is not necessarily finding solutions to problems that affect the river and its watershed, but rather determining which sections of the watershed need the work. By gathering information from many different areas throughout the watershed the sites can be compared and rated according to their characteristics. The parameters for collecting information are limited only by the ability of the collector to organize and manage the details so that clear conclusions can be made from them. Generally for a watershed project, inventories include basic water quality tests, aquatic insect censuses, and surrounding land characteristics.



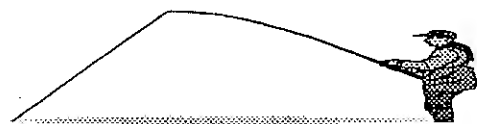
### What To Look For?

While some areas of a stream may have obvious problems such as murky or colored water, visible trash, or even dead aquatic life, commonly the signs of degradation are not as clear. A person involved with improving stream quality may need to piece together a profile of many qualities before answers become clear. When looking at the stream it is often a good idea to simply write down a visual impression of the site. Physical characteristics such as stream side plant cover, stream bottom substrate types, and surrounding

land use will give the viewer insight into potential weaknesses. For instance, if a stream which is known for its trout population has an area devoid of fish it may not take as long to decide why once the surrounding area is taken into account. If there is no cover in the form of overhanging brush, undercut banks, stumps, boulders and logs trout will be much less likely to reside there.



Trout need that type of cover for protection from predators and to establish their territories. Streams with plenty of meandering curves and diversity between shallow, rocky, fast riffles and slower, deeper pools and runs will normally have higher trout populations. If some or all of these elements are missing from the stream then an investigator will need to determine why that is true. Before a plan is developed to improve the stream it must also be determined whether or not that condition constitutes a change from how it used to be. The most important point for people to consider when developing management practices is whether their decision will change things for the *better*. Too often, short sighted ideas which appear to solve problems in reality only create more in the future.



## Aquatic Insects: More Than A Meal

We all know that fish spend a good amount of their time feasting on insects. For years fly fishermen have devoted considerable amounts of their time using and creating flies with hopes of taking the fish home as *their* supper. However, aquatic insects can serve as more than just a food source for organisms in a stream. Researchers may use insects as indicators to stream quality. Specific insects, like all creatures, have specific requirements for which to live. Mayflies, caddisflies, and stoneflies share many of the same conditions for survival with the trout that feed on them. These insects are dependent upon cold, clear, well oxygenated streams to survive. They also rely on rocky and gravelly stream bottoms to protect them from predators. Increased sand or sediment cover the insects habitat forcing them to find other areas of the river to live. The departure of the insects causes the trout to look elsewhere for food. Insects may also be affected by changes in water chemistry faster than fish or larger organisms. Absence of certain insects like mayflies, or the presence species more tolerant to poor water quality in a stream may relay a message that problems are on the way, if not already present.



as nitrogen and phosphorus, and levels of dissolved oxygen help provide information as well. A river high with nitrogen or phosphorus may have increased plant growth within the stream. While growth is often seen as a good thing, it can be damaging to an environment where there is a sensitive ecosystem. Too much plant growth may lead to a gradual depletion of oxygen, depriving the fish and insects of clean water to breathe, and forcing them to other areas of the river. Nutrient overloads are often the result of chemicals like fertilizers from fields, yards, or cleaning detergents from urban areas reaching the stream through runoff. There are ways to address these problems. Farmers can use best management practices which decrease the amount of direct runoff to the stream and can install settling basins so that some of the contaminants settle out before reaching the stream. City folks can also affect the amount of nutrient load to a stream by properly disposing of waste and keeping it out of storm sewers. Once we are aware of how we affect a stream, the easier it can be to improve it.



## The Chemical Component

Part from observing the physical characteristics of a river, and discovering the clues insect may show us, the other main aspect of an inventory is the chemical component. Researchers can use the chemical characteristics of a river to determine stream health as well. Measurements of pH (acid or base levels), nutrient levels of chemicals such

### Want To Help???

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# Iron River Informer

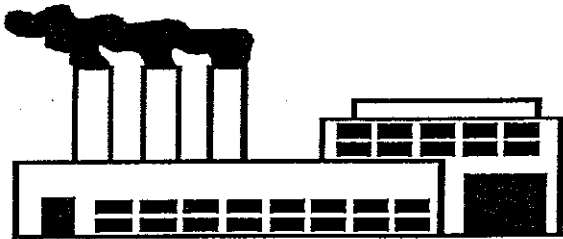
Vol. 1, Issue III

May 2000

## A Little Goes a Long Way

### Where's the Point?

When many of us think of pollution, we often visualize images of smokestacks coughing out thick gray smoke, or industries pumping waste directly into a river or lake. This type of pollution is known as **point source pollution**. Yet, within the past 15-20 years regulations enacted by our government and enforced by groups like the Environmental Protection Agency and the Michigan Department of Environmental Quality have significantly reduced pollution from these origins.



Despite the major reductions in amounts of contamination from point source pollution, many of our nation's waterways, including the Iron River, are still in jeopardy. Rain and water washing over the land and through the ground eventually reaches our lakes and streams. As this water travels over the ground, it picks up dirt, chemicals, and other debris before draining into a body of water or the groundwater. This form of polluted runoff is known as **non-point source pollution**. In fact, the Environmental Protection Agency has estimated that this type of pollution is now the single highest cause of the deterioration of our nation's water quality.

### It Has to Come From Somewhere

**N**on-point source pollution is another term for polluted runoff. Although we may not realize it, we all contribute to polluted runoff. Often, sources of pollutants come from our everyday activities and the way we use the land. Some of the major types of pollutants carried by non-point source pollution include:



**Pathogens:** Disease causing organisms such as bacteria and viruses that come from the fecal waste of humans and animals are known as pathogens. Pathogens wash off the land from animal waste, and can also enter our waterways from improperly functioning septic tanks, leaky sewer lines and boat sanitary disposal systems. Exposure to pathogens either by direct contact with water through swimming, wading, etc. or through ingestion of contaminated water can cause illness.



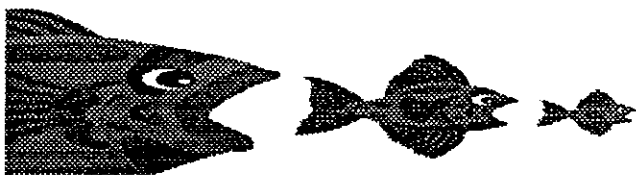
**Nutrients:** Nutrients are compounds that stimulate growth, like nitrogen and phosphorous. Under normal conditions, nutrients are beneficial and necessary, but in high concentrations, they can become an environmental threat. Over fertilization of ponds, bays and lakes by nutrients can lead to massive algal blooms, the decay of

which can create odors and rob the waters of life-sustaining oxygen. Nutrients in polluted runoff can come from agricultural fertilizers, septic systems, home lawn care products, and yard or animal wastes.



**Sediments:** Sand, dirt and gravel eroded by wind and runoff usually ends up in stream beds, ponds or shallow costal areas, where they can alter stream flow and decrease the availability of healthy aquatic habitats. Poorly protected construction sites, agricultural fields, roadways and eroding banks can be major sources of sediment.

**Toxic Contaminants:** Substances that can harm the health of aquatic life and/or human beings are considered toxic. Toxins are created by a wide variety of human practices and products, and include heavy metals, pesticides and organic compounds like PCB's. Many toxins are very resistant to deterioration and tend to be passed through the food chain to be concentrated by top predators. Fish consumption health advisories are the result of concern over toxins. Oil, grease and gasoline from roadways, and chemicals used in homes, gardens, yards and on farms are major sources of contaminants.



**Debris:** Trash is usually the most noticeable and easily corrected form of pollution. It interferes with enjoyment of our water resources and, in the case of plastic and Styrofoam, can be a

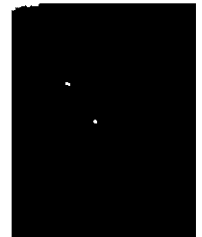
health threat to aquatic organisms. Typically this debris starts as street litter that is carried by runoff into our waterways.

## What Can We Do About It?

One of the major goals of the Iron River Watershed Project is to educate and inform the public so that we all work together to help improve our river and the watershed. Here are simple things we can each do every day to limit the amount of non-point source pollution in our area:

- Use only the directed amounts of fertilizer, pesticide, etc.
- Never dump household, chemical, or lawn waste into the storm sewer
- If you have waterfront property, establish a buffer between the water and your lawn to help filter pollutants and stabilize banks
- Wash your boat or vehicle over grass, not in the street or driveway
- Do not litter (this includes hot water heaters, car parts, and old refrigerators)

Dumping a little extra waste down the sewer may not seem like much, but pollutants washed into our watershed through storm drains and runoff can add up to make a big impact on our streams and lakes. A little conscious effort by everyone can go a long way toward improving where we live, work and play.



## Want to Help???

A watershed project cannot be fully successful without

the support and cooperation of those who live throughout the watershed. If you live in the Iron River Watershed, and have ideas or issues which may help to improve the watershed please feel free to contact the project manager, Jim Bond, at 906-875-3765 so that plans can be developed to address these concerns. What we do to the river, we do to ourselves and our neighbors. Help us make this project a successful one!

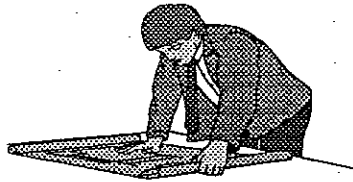
# Iron River Informer

Vol. I, Issue IV

November 2000

## Preparing For the Future

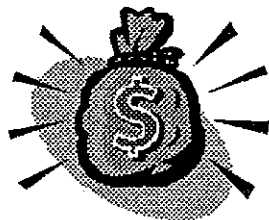
### Planning the Next Phase



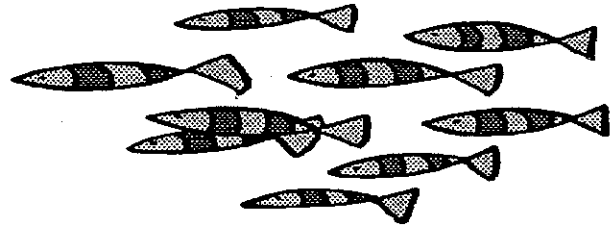
The Iron River Watershed Project has now been active for a little over a year. During that time we have spent a substantial effort inventorying the river. Through our inventory and assessment we have been able to identify locations which not only represent areas in need of improvement, but also those sections which define the Iron River as a blue-ribbon trout stream. Now that snow is upon us and the weather conditions encourage me to stay indoors I will be compiling all of the information gathered to date and incorporating it into the management plan. This plan will then be the guidebook for improving and preserving the Iron River watershed for years to come.

Some areas in the watershed do not need a lot of study and assessment to tell they are impacting the river. Eroding banks, storm sewer drain outlets or improperly designed stream crossings can all have obvious negative consequences. During our inventory we identified some locations which we know need improvement. Many of these areas are located within the cities of Iron River and Caspian and are the result of urbanization and mining.

This past summer the DEQ released grant application packages (GAPs) to fund implementation of stream improvement projects and



information/education efforts. The Iron River Watershed Project applied for money through both the Clean Michigan Initiative and the federal 319 programs. If our applications are accepted, the Project will continue to be funded through 2004 and should begin work on the improvements in the summer of 2001. The DEQ has tentatively scheduled to award grant applications this spring. The funding for the current planning phase of the project will end in June 2001. If our GAPs are successfully awarded, the Iron River Watershed Project will bring in more than 700,000 dollars of state and federal money for work on the river.

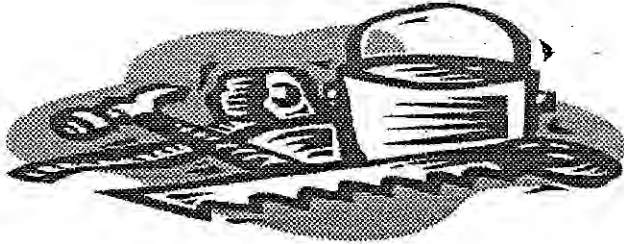


### Gettin' Dirty

Possibly the contaminant of greatest concern for the Iron River is sediment. Due to the high caliber of the river as a trout stream this sediment poses even more of a threat. Too much sediment in a trout stream can cover the bottom and bury the gravel necessary for fish spawning beds and for the insects which trout feeds upon.

Fine sediments can enter the river through any number of pathways. Dirt and sand collected on streets wash into the river after rain events or snow melts. Runoff from bare earth exposed as a result of construction activities or mining

operations can also contribute large amounts of sediment. While we cannot entirely prevent sediment from entering a stream, the physical improvements we implement are intended to limit the amounts of contaminants which would otherwise be unnatural.



Some of the projects scheduled for implementation include modifying storm sewer outlets, stabilizing eroding banks and gullies caused from runoff and storm sewer drains, in-stream log and brush structures which help remove and trap sediment, replacing a double culvert stream crossing with a bridge, and providing alternate watering systems to keep cattle out of the river.

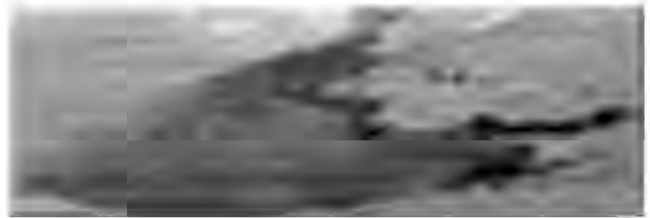
## You Learn Something New Every Day!

**E**ducation is an equally important component to managing a watershed. Without a proper understanding of why we are doing things, what we are doing has little impact on the general public. However, if we can successfully describe to people the issues of watershed conservation and the threats that a watershed like the Iron River's faces, then we have a much greater chance of positively influencing the river for many years to come.



As part of our implementation phase, we will be working on more than physical improvements. Part of the plan is to increase our information and

education strategies so that more people know and understand who we are and what we are doing. A few of the many I/E activities that we have incorporated in the implementation phase include: a website devoted to the Iron River Watershed project and it's progress, numerous presentations to local organizations and school classes, the development of single high quality publication describing the watershed and the project in detail, signs to signify the watershed boundaries, informational kiosks at the Iron River RV park and the Apple Blossom Trail in Caspian, and continuing support of the Adopt-A-River annual cleanup.



## Want To Help???

**A** watershed project cannot be fully successful without the support and cooperation of those who live in and along the watershed. If you are aware of possible critical areas in and along the river such as erosion sites, sediment discharge points or sewer overflows, or if you would like to attend a monthly Iron River Watershed Council meeting, please feel free to contact the project manager, Jim Bond, at 906-875-3765 for more information. What we do to the river, we do to ourselves and our neighbors. Help us make this project a successful one!