# RYBA

**Newsletter of the Minnesota Chapter of the American Fisheries Society**

**Year 2000 No. 1**
**Annual Meeting Issue**


## President's Message

**by Paul Radomski**

In my commencement president's column I am pleased to report that our chapter was honored with the **Most Active Chapter Award** from the North Central Division at their annual business meeting held December 7, 1999, at Chicago. We should all be proud of this, especially the Committee Chairs who do most of the work and the current and past officers who have guided us to where we are today. Julie Westerlund wrote and submitted the nomination document, and she did an excellent job.

I encourage everyone to attend our annual meeting to be held in St. Cloud on January 19-21, 2000. Mark Hove has done a great job putting the meeting together. I am going only because I have to as your president, and my boss strongly encourages it (bless his heart). But you should go to slow your brain turning to mush or to accelerate that natural process with a fermented beverage brewed from malt and flavored with hops drunk with your companions. I also am attending the Continuing Education Workshop, which is about disseminating information. Not that I have anything interesting ever to say, but I am intrigued that many people in the news don't either.

Don't forget to attend our annual business meeting to be held on Thursday, January 20th, at 3:15. Yes, I know that these things are boring as all get out. But this time I am in charge of part of the agenda, and who can predict what will happen? Someone, like yourself, that has a sense of bureaucratic responsibility should be there. For the love of the chapter, please show up save this organization and send it on to a brighter and more productive future before it is too late. And don't forget to vote.


***RYBA*** Editor: Paul Radomski
1601 Minnesota Dr, Brainerd, MN 56401
phone: 218.828.2246 fax: 218.828.6022
e-mail: paul.radomski@dnr.state.mn.us
radomski@brainerd.net

The Chapter publishes ***RYBA*** four times a year (Jan., May, Sept., and Nov.). Deadlines for article submission are: April 15, Aug. 15, Oct. 15, and Dec. 15. Necessary Burbot Legal Language: The views and opinions expressed herein are not necessarily those of the Minnesota Chapter. Printed on butchered trees.


## Officer and Excom Reports

**President-Elect - by Mark Hove**
See Annual Meeting Agenda in this ***RYBA***.

## Committee Reports

**Public Education - by John Hiebert**
I was asked by Paul Radomski and Linda Bylander to improve on the existing display used to promote the Chapter at the State Fair and Chapter Meetings. The previous table top display consisted of two 30" x 24" panels, with text and pictures attached by velcro, describing the goals and actions of AFS and the Minnesota Chapter. It was decided that a more professional display was needed to better deliver the Chapter's message.

I talked with Linda Bylander and Adele Smith about possible vendors to design a display. They both recommended contacting Rainbow Signs of Anoka. Rainbow Signs had done a number of displays for the DNR, which were of high quality and relatively low cost. After meeting with Rainbow Signs and coming up with a preliminary design, Roland Sigurdson and myself modified the existing text from the current display to fit the new design. The text was then sent to Paul Radomski for review before it was incorporated into the display. The pictures for the display were selected from the DNR Library and Steve Quinn of the In-Fisherman provided an additional photo.

A meeting with Rainbow Signs was held to setup the layout of the display, including which photos to be used and the final order of the text. A final budget of $825.00 to construct the sign was agreed upon by myself and Rainbow Signs. A week later Rainbow Signs called and asked if they could meet with me again. They were very interested in improving on the existing design, increasing the size, incorporating color text and backdrops, but said the cost would have to go up. I stated that our non-profit organization could not afford the increase

## INSIDE



**Quote of the Issue**
"Nobody makes a greater mistake than he who does nothing because he could only do a little." Edmund Burke

in cost, whereby they agreed to donate $675.00 in labor and materials to finish the job. For this donation, I agreed to add a line of text stating the sign was made by Rainbow Signs.

The final product is a stand alone, two-panel display that has two 8' x 4' panels. The display will be set up at the 2000 MN AFS and Wildlife Society Meeting in St Cloud.

**Nominations Committee - by Melissa Drake**
The ballot for new officers is in this ***RYBA***. Please vote now!

**Students - by Carl Ruetz**
Travel awards were available for students planning to attend the upcoming chapter meeting in St. Cloud, Minnesota. Awards have traditionlly covered at least the registration costs of the meeting, but vary depending on the number of qualified applicants. Applications for travel awards may be obtained from Carl Ruetz (612-624-3785, crr@fw.umn.edu).

The Student Committee has been working with the Fund Raising Committee to solicit donations for this year's raffle. Please consider making a donation to the raffle. Donations of unique items (e.g., home-brewed beer, personally-tied flies, etc.) are especially sought. Further, if you know of any businesses that may be interested in making a donation, then please contact Carl Ruetz, Tom Burri (218-286-5220, tom.burri@dnr.state.mn.us), or Henry VanOffelen (218-847-1579, henry.vanoffelen@dnr.state.mn.us).

**Salmonid NCD TC Representative – by Pat Rivers**
Experimental catch-and-release regulations on two southeast Minnesota trout streams will become permanent, special regulations this spring. After reviewing several years of electrofishing data, DNR officials in Region V and St. Paul feel the regulation is working on sections of the Middle Branch Whitewater River (Olmsted Co.) and Hay Creek (Goodhue Co.). These data coupled with 100% public support (informational meetings and written comments) were the impetus to make the regulations permanent.

The winter trout season began January 1. Portions of twelve streams are open for catch-and release trout fishing with barbless hooks. Six of those streams, located south of Interstate 90, opened to winter fishing March 1, 1999 as a result of efforts to increase angling opportunities.

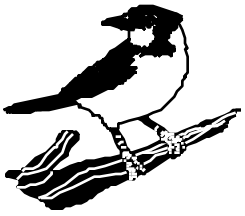
**COMCO Meeting - by Gerry Grant**
I represented the MN AFS at the latest Coalition of Minnesota Conservation Organizations (COMCO) meeting which was held in Edina on December 7th. The meeting was attended by about 20 representatives of conservation organizations and several DNR representatives. The meeting was informational in nature, and dealt mostly with the Con-Con land issue, short and long-term DNR budget shortfalls and setting up a communications network. One new issue was introduced by Steve Morse, Deputy Commissioner of the DNR. The issue was the exclusive licensing of deer hunters in the Northwest Angle by the Red Lakes Band, which wants to exercise their sovereignty. The Band wants the ability issue about 85 deer hunting licenses for the Northwest Angle Reservation land for non-band members without requiring a Minnesota deer hunting license. After reviewing the status of the land (about 85% of land in the NW Angle is reservation land) and legal precedents in other states, the DNR position is that challenging this may result in a loss in court. COMCO members were concerned that this would affect fishing rights or other hunting rights on the reservation. The DNR is writing legislation which would legalize this practice, and the members stressed that the bill should be very specific to deer hunting on the NW Angle reservation land. Deputy Commissioner Morse asked for feedback on the issue. The Con-Con committee, chaired by Al Farmes, hasn't met since the last general meeting and is waiting on the language of legislation being drafted by the DNR on the issue. The short and long-term budget issues were briefly discussed, but committees haven't met since the last general meeting. Legislators have been invited to regional informational meetings on the increase in license fees, which have occurred throughout the state. These meetings have been attended mostly by legislators who are in support the increase in license fees. Some meetings in Northern Minnesota were poorly attended. Roger Holmes stressed that bipartisan support is needed to pass the license fee increases. Discussion ensued about publishing a score-card in the Outdoor News specifying which legislators support the fee increase. The DNR will host meetings in January at all regional headquarters, and will hold two meetings in the metro area. Brad Moore added that the Governor was in support of the fee increase and will attend one of the metro area meetings to attract media. Tom Landwehr discussed setting up a communications network by which members of all COMCO organizations could be informed on issues. It was agreed that representatives of COMCO organizations should construct e-mail lists of members so an information tree could be built and used to disseminate information. The next COMCO meeting was scheduled for January 20th at 6:30 at the Edina Community Center.

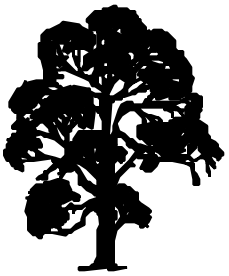
## Minutes of Chapter Meetings

See next RYBA for annual meeting minutes.

## Division Technical Committees

See next RYBA for summer meeting schedules.





## Upcoming Events

January 4-6, 2000. 29th Annual WI Chapter AFS Meeting. Manitowoc, WI. Contact Lee Meyers 920.492.5834.

January 19-21, 2000. 33rd Annual Minnesota Chapter AFS meeting. Meeting with The Wildlife Society. Contact Mark Hove 612.624.3019. See call for papers in this ***RYBA***.

April 25-28, 2000. Ecology and Management of Tailwaters in the United States. Wahweap Marina, Lake Powell, AZ. Contact Barbara Ralston (520.556.7455) Bralston@flagmail.wr.usgs.gov

July 9-12, 2000. WATERSHED 2000 Vancouver, British Columbia, Canada Phone: 800.666.0206 or 703.684.2452, E-mail: msc@wef.org).

August 20-24, 2000. 130th Annual AFS Meeting. St. Louis, MO. Contact Betsy Fritz 301.897.8616.

## Contributions: Letters and Commentary

To the Editor:

The editorial in the last issue of ***RYBA***, like most in recent history, was to say the least, thought provoking. The entire accelerated walleye stocking program, particularly the process in which it was implemented does indeed make one wonder. However, I would suggest that the DNR's stance was one more of preservation rather than that of overreaction. For anyone that had the opportunity to observe any one of the public hearings, it didn't take long to realize that the deck was stacked and the outcome predetermined; more walleyes were going to be stocked into Minnesota lakes - period. The only remaining question was how that was going to be paid for. The Editor suggests that the AWP monies could have been better spent on acquiring aquatic management areas or an education campaign, both noble causes. However, in reality had a "deal" not been cut and the additional money not come from the legislature, it was those types of programs that were in jeopardy of being cut in the effort to increase walleye production. Additionally, cost (other than who was going to cover the cost) was never an issue. If it takes $10,000 to reclaim a pond, do it. If it raises production costs and there is a need to purchase private fish, do it. Just stock more fish!

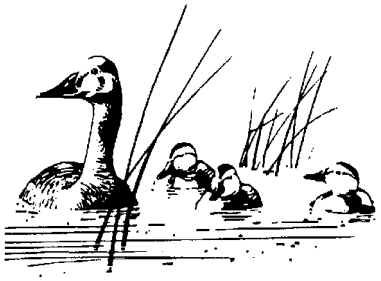
The entire process also raises the question of what is the role of a state (DNR) fisheries biologist or manager in this process. Strictly speaking it is one of advisor. We can study stocking rates, determine successes and failures, and crunch numbers from now until eternity but in the end it is our role to make recommendations to policy makers. The hard part for many of us comes when, despite strong scientific evidence supporting our recommendation, the policy makers and constituents ignore it. Reluctantly, as professionals we must live with those decisions. If other groups can convince policy makers that it is the right thing to do, (despite the cost and the law of diminishing returns), so be it. If the public can convince policy makers that it is a good idea to have Area Fisheries Managers delivering walleye fillets to Cub Foods, fine. The bottom line is we live in a democracy and elected officials make the decisions. Now, I don't advocate just throwing in the towel and letting stupidity reign. I strongly feel this is where a sound, effective AFS chapter is vital. I believe that an educational campaign and lobbying effort from a source outside of government is crucial to changing public sentiment. As professionals AFS is our venue to promote and advocate what is best for the resources we manage.

Jeff Reed
Glenwood, Minnesota.

## Interesting Articles and Publications

B.A.S.S. Times. A monthly publication from B.A.S.S., Incorporated. I recommend that you get this paper. It is full of interesting reading.

Closer to home, the Mille Lacs Fishing Digest is always good reading. So is Masinaigan, published by the Great Lakes Indian Fish and Wildlife Commission.



## Editorial

### Let's Go and We'll Take the Fish Too

On a sunny day, in a tree overlooking the Nokasippi and Hay Creek valleys, I am struck by the beauty of the world. The late fall colors and the smell of decaying leaves erodes my desire for nomadism. The view, deer present or not, comforts me. But the tree-top view and poor vision hide the disturbing.

My simple mind can not grasp the significance of life's predicament--is it a dilemma, an unpleasant potential, or just natural? I assume that the planet will someday lose it's atmosphere. It will then no longer support the diversity of life once present. Humans, however flawed, present Earth's life an opportunity to colonize other worlds. In fact for all I know, humans might be the best species to have come along to move along Earth's produce.

This thought I find ironic, for we have done the unthinkable in our drive of conquest. We have manipulated it all, but the true realty value is now greatly diminished. Why are we here? Was it a quirk of evolution? What is our purpose? The answers of a Polish Pope are no help--the strength of one's belief does not decide the facts. Perhaps the questions are best unanswered or not asked. Survival has always been the mission. Each individual and species tries to keep life going, like a long game whose players despise losers.

Here the game is now half over, and the important players keep looking for new venues. Survival for us has always depended on foresight, good luck, and adaptability. I tell my children that the future is out there. When I leave the woods and travel about our domesticated landscape, the urge to move returns. I am willing to leave now.

We will take numerous species with us, most intended, some not. I ask that we take some fish. Fish and humans go way back. Our want for meat made us. We have co-evolved. Deer would be nice to bring as well; we could at least take their code. Our descendants would appreciate our nostalgia. We are life's best hope, and our survival depends on a challenge of this magnitude. Let's get going, time is running out. I'll pack the fish bowl.

## Of Interest

USGS Announces Federal Geographic Data Committee Endorsement of Biological Metadata Standard

Dr. Dennis B. Fenn, Chief Biologist, today announced that the biological metadata standard, developed by the U. S. Geological Survey (USGS) and its partner agencies and organizations for use in the National Biological Information Infrastructure (NBII), has been officially endorsed by the Federal Geographic Data Committee (FGDC) as an FGDC standard.

The USGS is working with many partner agencies and organizations to help build the NBII <http:/www.nbii.gov> as a distributed electronic federation of biological data and information maintained by a variety of federal and state government agencies, universities, museums, libraries, and private organizations. The NBII biological metadata standard <http://www.fgdc.gov/standards/status/sub5_2.html> is used to describe or catalog biological data sets or information products (such as maps or technical reports) by documenting such things as subject matter; how, when, where, and by whom the data were collected; accuracy of the data; and availability and distribution information.

The NBII standard was developed as a ôbiological data profileö of the existing FGDC Content Standard for Digital Geospatial Metadata <http://www.fgdc.gov/metadata/contstan.html>); specifically extending the use and applicability of this widely used standard for documentation of all types of biological resources data and information products.

At their October 26, 1999, meeting, the FGDC Steering Committee formally approved the biological data profile as an official FGDC standard. Prior to this official endorsement, the biological profile underwent an extensive FGDC review and approval process for more than 1 year. The FGDCÆs Biological Data Working Group, which includes representatives from several different Federal agencies and non-government organizations, worked to coordinate the development and review of the profile. The draft profile underwent a formal 90-day public review in the fall of 1998. Additionally, the American Institute of Biological Sciences conducted two expert peer reviews of the standard, one at the initial stages of its development and one in January 1999, following the formal public review. All of this input and feedback was then used to revise and enhance the standard.

The FGDC is an interagency committee, organized in 1990, that works with many non-federal agencies and organizations to foster development of the National Spatial Data Infrastructure (NSDI). The NSDI encompasses policies, standards, and procedures for organizations to cooperatively produce and share geospatialdata.

The biological data profile is the first NBII data standard that is also an official standard for the NSDI. Metadata developed according to the NBII/NSDI biological metadata standard are made available for searching through the online NBII Metadata Clearinghouse <http://www.nbii.gov/clearinghouse.html>. The NBII Metadata Clearinghouse is also linked to the NSDIÆs National Geospatial Data Clearinghouse.

As the nation's largest water, earth and biological science and civilian mapping agency, the USGS works in cooperation with more than 2,000 organizations across the country to provide reliable, impartial scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize loss of life and property from natural disasters, to contribute to the

conservation and the sound economic and physical development of the nation's natural resources, and to enhance the quality of life by monitoring water, biological, energy, and mineral resources.

**News from Around the World**
**Submitted by Cynthia Suchman and others**

Hatchery Coho Salmon. On Nov. 12, 1999, OR Circuit Court Judge Robert J. Huckleberry ruled against the Pacific Legal Foundation's request that the OR Dept. of Fish and Wildlife not kill about 3,000 Alsea River coho salmon expected to return to Fall Creek Hatchery. Dept. biologists argue that hatchery coho are not adapted for like in the wild and would threaten wildcoho salmon inhabiting the Alsea River Basin, that are listed under the Endangered Species Act. Pacific Legal Foundation (Sacramento, CA) argued that preventing hatchery salmon from spawning in the wild suppresses the number of wild salmon and allows the government to impose land-use controls and other restrictive measures. [Portland Oregonian]

BC Fishermen's Relief. On Nov. 10, 1999, WA fishermen are scheduled to meet British Columbia fishermen and representatives of First Nations and Coastal Communities under the Peace Arch at the Blaine border crossing to present an initial delivery of food and other aid. This effort responds to the loss of the summer 1999 sockeye fishery and changes in the West Coast of Vancouver Island salmon harvest that devastated BC's fishery-dependent communities.

Dam Breaching Economics. On Nov. 3, 1999, Trout Unlimited and the Earthjustice Legal Defense Fund released a report completed by ECONorthwest (Eugene, OR) analyzing preliminary data gathered by the Army Corps of Engineers and concluding that the economic benefits of breaching 4 lower Snake River dams would exceed the costs to the region. The study [http://www.tu.org/library/conservation.html ] asserts that the Corps of Engineers overestimated the negative effects of dam breaching and underestimated the positive effects. [Portland Oregonian, Seattle Post-Intelligencer]

WA Salmon Initiative. On Nov. 2, 1999, WA voters defeated Initiative 696 by {more than a 60% to 40% margin,} with the majority rejecting the Initiative in 34 of the state's 39 counties. This initiative would have banned 18 types of commercial fishing gear from WA state waters. [Assoc Press, Seattle Times, personal communication]

BC Salmon Management. On Oct. 21, 1999, a group of 14 southern Vancouver Island Native bands met to discuss when to fish illegally to assert their treaty rights. On Oct. 21, 1999, a provincial fisheries official announced that an independent report had concluded that BC fishermen and processors lost as much as $57 million due to low Fraser River sockeye returns this year. On Oct. 22, 1999, federal Dept. of Fisheries and Oceans released a policy paper identifying allocation priorities for salmon -- first prior is conservation, followed by First Nations' access for food, social, and treaty purposes; recreational fishery access to chinook and coho; and commercial fishery access to sockeye, pink, and chum salmon. On Oct. 27, 1999, leaders of the 14 southern Vancouver Island Native bands were reported as working on an agreement with Vancouver-area First Nations that would allow them to fish on the mainland. [Assoc Press, Canadian Press, Portland Oregonian]

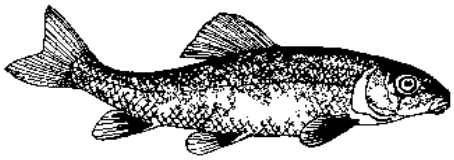
BC Salmon Culture. On Oct. 18, 1999, British Columbia provincial officials announced new ecological guidelines for salmon aquaculture, implementing 49 recommendations for regulatory and operational change identified in a 1997 Salmon Aquaculture Review. The BC government also agreed to provide 20-year tenure renewals for existing salmon operations, and to relocate salmon farm tenures that were voluntarily taken out of production due to poor siting. Although the total number of operations is limited to not exceed the current 121 salmon farms, 10 new operations will be allowed to open if they use new closed-containment technology. Salmon operators must take additional measures to prevent the escape of farmed fish or risk losing their licenses. Salmon operators will be reviewed annually on their performance. On Oct. 27, 1999, a report paid for by the Canadian federal commissioner for aquaculture development was released, concluding that escaped farm fish poses little threat! to native species through genetic interaction. Critics faulted the report for its lack of attention to concern for ecological fish health problems. [BC Salmon Farmers Assoc press release, Canadian Press]

ISA in Atlantic Salmon. In mid-October 1999, Canadian scientists confirmed reports indicating that Atlantic salmon escaping from net pen culture had infected wild salmon in New Brunswick's Magaguadavic River with infectious salmon anemia (ISA). This river is 10 miles from the ME border. This is the first time ISA has been reported in wild Atlantic salmon. By early November 1999, several leading UK supermarkets, including Marks & Spencer, Safeway, and Sainsbury's, had banned the sale of salmon from 24 farms suspected and 11 farms confirmed as having ISA. [Assoc Press, Glasgow Sunday Herald]

National Cormorant Management Plan. On Nov. 8, 1999, the U.S. Fish and Wildlife Service announce its intent to develop a comprehensive national cormorant management plan [http://www.fws.gov/r9mbmo/issues/

cormorant/cormorant.html ]. As part of this effort, an environmental impact statement will be written to evaluate alternative management options. Public comment on the scope of the EIS is solicited, with public meetings to be scheduled and announced.} [Fed. Register, FWS press release]

EU Fishing Capacity. At a Nov. 22, 1999 meeting of the EU's Fisheries Council, 13 of the European Union's 15 member states voted to adopt (the Netherlands and United Kingdom voted against) a compromise on the EU's fourth multi-annual guidance program (MAGP) aimed at reducing the size of the EU commercial fishing fleet. The plan allows EU funding to replace fishing vessels on a one-to-one basis, but would force nations to scrap 30% more vessels than they build if member states do not adhere to a pre-agreed schedule for fleet restructuring. [Environment News Service]



## On the Underside

**submitted by Charles Anderson, Dennis Schupp, and Todd Marwitz**

A Mathematician, a Biologist and a Physicist are sitting in a street cafe watching people going in and coming out of the house on the other side of the street. First they see two people going into the house. Time passes. After a while they notice three persons coming out of the house.

The Physicist says: "The measurement wasn't accurate." The Biologist concludes: "They have reproduced." The Mathematician says: "Now if another person enters the house, it'll be empty again."

Thoughts:
1. Growing old is mandatory; growing up is optional.
2. You're getting old when you get the same sensation from a rocking chair that you once got from a roller coaster.
3. The real art of conversation is not only to say the right thing in the right place, but also to leave unsaid the wrong thing at the moment of temptation.
4. The best way to forget all your troubles is to wear tight shoes.
5. The nice part of living in a small town is that when I don't know what I'm doing, someone else does.
6. If at first you don't succeed, see if the loser gets anything.
7. Funny, I don't remember being absent minded.
8. I went to school to become a wit, only got halfway through.
9. Remember, amateurs built the ark. Professionals built the Titanic.
10. Talk is cheap because supply exceeds demand.
11. There is always death and taxes; however death doesn't get worse every year.
12. People will accept your ideas much more readily if you tell them that Benjamin Franklin said it first.
13. My inferiority complex is not as good as yours.

Something you can use. a spell checquer!!!!!!!!!

Eye halve a spelling chequer
It came with my pea sea
It plainly marques four my revue
Miss steaks eye kin knot sea.
Eye strike a key and type a word
And weight four it two say
Weather eye am wrong oar write
It shows me strait a weigh.
As soon as a mist ache is maid
It nose bee fore two long
And eye can put the air or rite
It's rare lea ever wrong.
Eye have run this poem thre it
I am shore your pleased two no
Its letter perfect awl the weigh
Mi chequer tolled me sew.

Each year the staff at Beloit College in Wisconsin puts together a profile to give the faculty a sense of the mindset of that year's incoming freshman class. Here is this year's profile:

1. Black Monday 1987 is no more significant to them than the great depression.
2. There has been only one pope.
3. They can only really remember one president.
4. They were 11 when the Soviet Union broke apart and do not remember the cold war.
5. They have never feared a nuclear war. "The Day After" for them refers to a pill, not a movie.
6. They are too young to remember the space shuttle blowing up.
7. Their lifetime has always included AIDS.
8. Bottle caps have always been screw-off and plastic.
9. Atari pre-dates them, as do vinyl albums.
10. The expression "You sound like a broken record" means nothing to them.
11. They have never owned a record player.
12. They have never played Pac Man and have never heard of Pong.
13. Star Wars looks very fake, and the special effects are pathetic.
14. They have heard of an 8 track, but never actually seen or heard one play.
15. They have always had an answering machine.
16. Most have never seen a TV set with only 13 channels, nor have they seen a black and white TV.
17. They have always had cable TV.
18. There have always been VCR's, but they have no idea what beta is.
19. They cannot fathom life without a remote control.
20. Roller-skating has always meant inline skates.
21. Popcorn has always been cooked in the microwave.
22. The Vietnam War is as ancient history to them as W.W.I or W.W.II.

## TO ALL MN/AFS MEMBERS:
## BALLOT FOR 2000 MN/AFS CHAPTER OFFICERS

Please complete the following ballot and return it by mail if you wish to vote for candidates to serve as Chapter Officers in 2000. Mailed ballots must be received by January 17, 2000. You may also turn in your ballot at the annual meeting in St. Cloud prior to the business meeting.

Melissa T. Drake, Nominating Chair
DNR-Fisheries
1200 Warner Rd
St Paul, MN 55106

President Elect (vote for one):

| | | |
|---|---|---|
| _____ | Brad Parsons | Minnesota DNR, Glenwood |
| _____ | Rod Pierce | Minnesota DNR, Grand Rapids |

Secretary-Treasurer (vote for one):

| | | |
|---|---|---|
| _____ | Tim Brastrup | Minnesota DNR, Brainerd |

Executive Committee Members at Large (vote for one in each category):

| | | | |
|---|---|---|---|
| Federal: | _____ | Chantel Cook | USFS, Bemidji |
| | _____ | Ann Schneider | USFWS, Fort Snelling |
| MN DNR: | _____ | Deserae Hendrickson | Fisheries Management, Ortonville |
| | _____ | Al Stevens | Fisheries Management, St. Paul |
| Academic: | _____ | Dan Siems | Bemidji State University, Bemidji |
| | _____ | Jay Hatch | University of MN, Bell Museum of Natural History |
| Open: | _____ | Brian Borkholder | Fond du Lac Reservation, Cloquet |

## PRESIDENT-ELECT CANDIDATES:

### Brad Parsons

Brad Parsons has been a Fisheries Research Biologist for the Minnesota DNR in Glenwood since 1987. He received a B.S. in water resources and biology from the University of Wisconsin - Stevens Point in 1984 and an M.S. in Zoology and Physiology from the University of Wyoming in 1986. His research has focused on walleye stocking and recruitment, centrarchid exploitation and early life history, and aquatic community interactions.

Brad has been a member of the American Fisheries Society since 1984 and of the Minnesota Chapter since 1987. His Chapter service includes a five year stint as newsletter editor, moving the publication into the ages of computers and bulk mailing. For the last three years, he has served as keeper of the Chapter Procedures Manual and de-facto parliamentarian. North Central Division activities include participation with the walleye and centrarchid technical committees and near annual attendance and technical presentations at the Midwest Fish and Wildlife Conference. He also served the Parent Society for two years as a member of the Outstanding Chapter Committee.

Brad's vision for the future direction of the Minnesota Chapter includes three main areas. First, we must continue our active participation in the Fish and Wildlife Legislative Alliance, increase the feedback between EXCOM and our delegates, and therefore give our delegates as much freedom as possible to speak out on behalf of our aquatic resources. With no scientific background in the DNR commissioners office and the potential for a unicameral legislature, this takes on added importance. Second, we should again increase our focus on continuing education by expanding the size of the committee. In this way, more classes, including two or three targeted "short courses", could be offered to more members without burning out the motivation of the committee chair. Third, we must broaden the diversity of our Chapter membership by actively recruiting people who may not be strictly "fish people", but who still have an interest in aquatic resources. This includes, but is not limited to, employees of county environmental services departments, environmental consulting firms, and private industry and manufacturing.

### Rod Pierce

The abundance and diversity of lakes drew me to Minnesota in 1982 when I began to work for the University of Minnesota. Since 1986, I have worked in Grand Rapids as a member of the Fisheries Research Unit for the Department of Natural Resources. My research has included northern pike population studies, fish sampling methodology, fish community dynamics, experimental regulations, and mine pit limnology. I received a master's degree in Fisheries Science from the University of Wisconsin - Stevens Point in 1980. I first became a member of the American Fisheries Society in 1978, was certified as a Fisheries Scientist in 1992, and have been a Minnesota Chapter member since 1983. Previous service to the Minnesota Chapter includes two terms each as Secretary/Treasurer and as chair of the nominating committee. For the North Central Division, I served as chair of the Esocid Technical Committee.

Should I be elected, I have a couple of simple goals. The first is to make the program at the annual meeting as intriguing as possible. This may mean shaking things up a little by using a different format. For example, the meeting could be started using a coffee-house approach and inviting a top-notch speaker. The second goal is to encourage a continuing education workshop with a topic that has the potential to draw new members into the chapter. Continuing education has been a strong and valuable tool for the chapter. Can we also use it to broaden our membership? While these are not "grand visions", they are aimed at promoting key functions of our chapter. I will continue to support the chapter's role as a scientific resource for other groups (e.g. State legislature, Fishing Roundtable) and as a voice on important fisheries issues.

# MINNESOTA CHAPTER OF THE AMERICAN FISHERIES SOCIETY CONTINUING EDUCATION WORKSHOP

## *"Getting the Word Out: Disseminating Natural Resource Information to the Public"*

***PRECEDING THE MN AMERICAN FISHERIES & WILDLIFE SOCIETIES 2000 ANNUAL MEETING***

***Who should attend:*** Fisheries and wildlife managers and researchers who want to communicate their work with diverse audiences. *All are welcome!*

***Date and Time:***
Wednesday, January 19, 2000
1:00 p.m. - 5:00 p.m.

***Location:***
Best Western Kelly Inn
St. Cloud, MN

### *What this workshop will entail:*

· **Presentations**

‡ Identifying your target audience and the right tool to convey your message
*C.B. Bylander, MN DNR Public Information Officer*

‡ How to make your message interesting AND meaningful
*Dennis Schupp, MN DNR Warmwater Research Supervisor*

‡ Developing relationships with media representatives & getting your story covered
*Steve Quinn, In-Fisherman*
*Eric Atherton, outdoor writer for the St. Cloud Times*

· **Hands-on Activity -** We'll walk through planning a sound bite. Bring examples of story ideas or the message you want to communicate.

· **Panel Discussion -** This time will be used to interact with presenters and to ask them questions.

.....

**Registration Form** Please register me for the 'Getting the Word Out' workshop.

Name _____
Address _____
_____
Phone _____
Registration Fee: $30

Payment Enclosed Payment processed by my agency/org. & will arrive separately

Send / fax form & payment (**please make check payable to MN Chapter of AFS**) to:

Laurie Sovell
MN Pollution Control Agency
1230 South Victory Drive
Mankato, MN 56001
507.389.1925 (voice)
507.389.5422 (fax)

Minnesota chapters of The Wildlife Society and American Fisheries Society present

## Welcoming the New Millennium: Fisheries and Wildlife Management in the 21st Century

Tentative Schedule: All events will take place at the Kelly Inn, St. Cloud, Minnesota

**Wednesday, January 19**

| | |
|---|---|
| 8:00 - 12:00 p.m. | MN DNR Fisheries Research meeting (continued from Tuesday) |
| 1:00 - 5:00 p.m. | Continuing Education Class - Getting the Word Out: Disseminating Natural Resource Information to the Public, Room-University A Sponsored by MN AFS, call Laurie (507.389.1925) for info. |
| 5:30 - 7:00 p.m. | MN AFS and MN TWS Executive Committee meetings |
| 6:30 - ≈9:00 p.m. | Meeting registration |
| 7:30 - 10:00 p.m. | Social with beer, snacks, and raffle |

**Thursday, January 20**

| | |
|---|---|
| 7:30 a.m. - ≈12:00 p.m. | Meeting registration |
| 9:00 - 9:15 a.m. | Welcome - TWS/AFS presidents - Janet Boe and Paul Radomski |
| 9:15 - 9:35 a.m. | Update on issues facing wildlife - Tim Bremicker |
| 9:35 - 9:55 a.m. | Fisheries emphasis for the new millennium - Ron Payer |
| 9:55 - 10:15 a.m. | Vision for 2000: political realities & opportunities-Steve Morse |
| 10:15 - 10:30 a.m. | Break |
| 10:15 - 11:45 a.m. | Presentations |
| 11:45 - 1:00 p.m. | Lunch |
| 1:00 - 3:00 p.m. | Presentations |
| 3:00 - 3:15 p.m. | Break |
| 3:15 - 5:00 p.m. | Chapter business meetings |
| 5:00 - 6:30 p.m. | Poster session with authors |
| 5:30 - 6:30 p.m. | Social with cash-bar |
| 6:15 - 9:00 p.m. | Banquet-10,000 years & 50 miles: a Minnesota Odyssey - John Tester, Awards Ceremony, & Fund Raiser |

**Friday, January 21**

| | |
|---|---|
| 8:00 - 8:15 a.m. | Announcements |
| 8:15 - 10:15 a.m. | Presentations |
| 10:15 - 10:30 a.m. | Break |
| 10:30 - 12:00 a.m. | Presentations, or Panel Discussion - The Transition From Traditional Fish & Wildlife Mgt. to Conservation Biology |
| 12:00 p.m. | Adjourn |

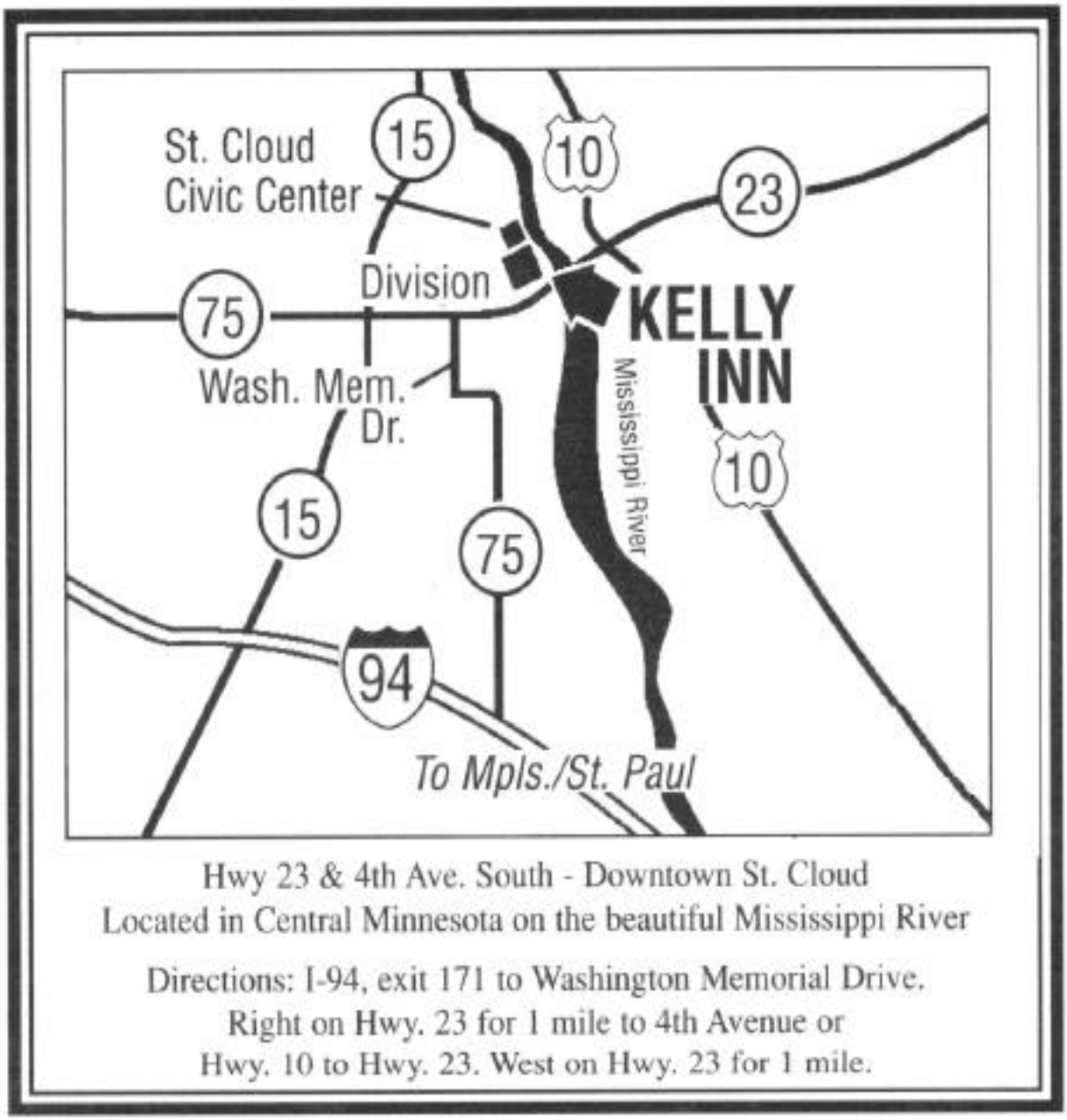
Directions to Kelly Inn: The Kelly Inn is located in downtown St. Cloud (Highway 23 (Division St.) and 4th Ave. South, St. Cloud, MN 56302). See map of St. Cloud below for details. When you arrive at the Kelly Inn go to the Registration Desk in the lobby for parking directions. Additional parking sites are described on the parking map below. Additional information about St. Cloud is available on the St. Cloud Convention Bureau's web page (http://stcloudcvb.com/).

Lodging: We have reserved a block of rooms at the Kelly Inn, St. Cloud. To reserve a room call the Kelly Inn (320.253.0606) and mention you are with the AFS meeting or TWS meeting for our reduced rate of $60/night for a single, $66/night for a double + 11.5% tax. The cutoff for making reserved room reservation is December 19. Less expensive motels in St. Cloud include: Thrifty Motel (800.898.6320), Super 8 Motel (800.800.8000), and Motel 6 (800.466.8356). Student members of MN AFS should contact Carl Ruetz (612.624.3785 or crr@fw.umn.edu) for information about financial support.

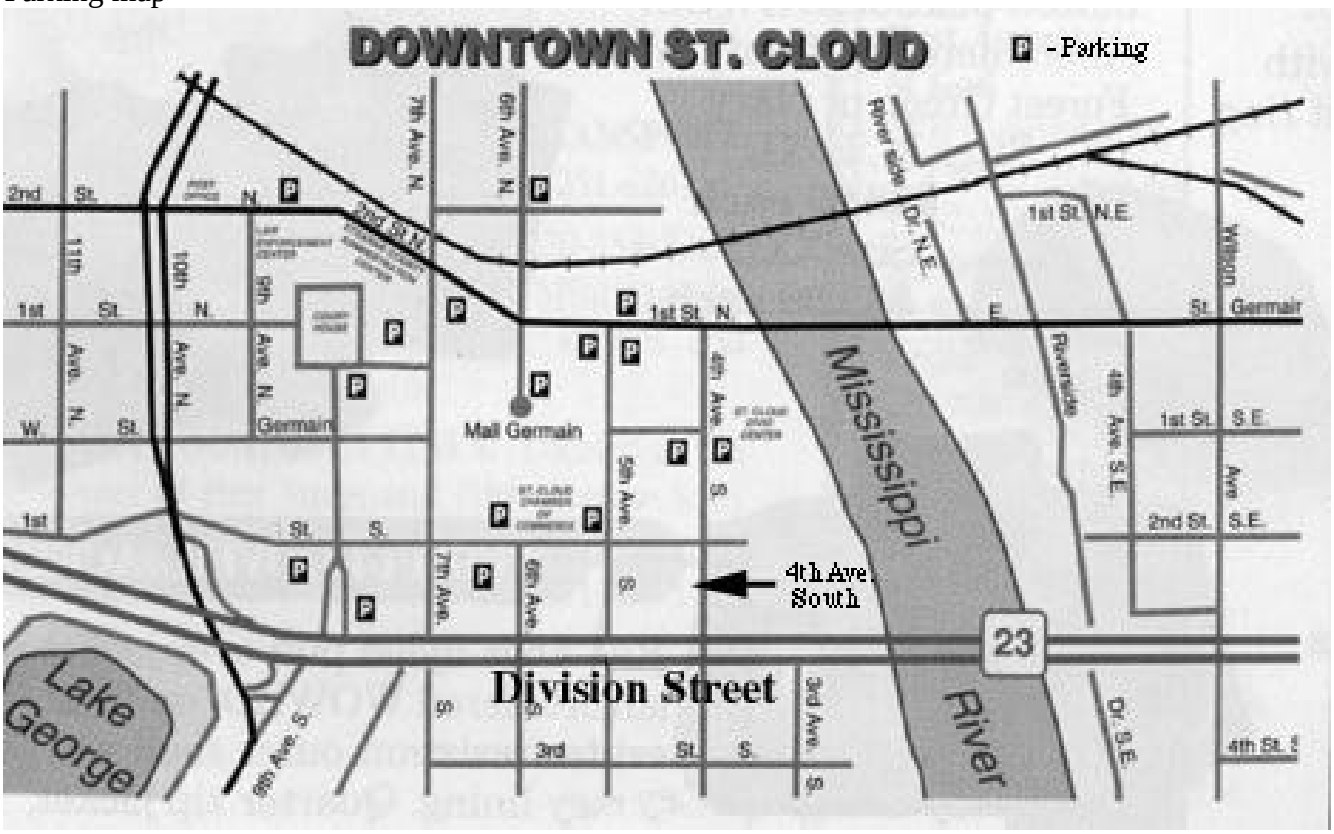
Meeting Registration: Registration will take place outside of Kelly Inn's Grand Ballroom. (See Kelly Inn map for

Grand Ballroom location.) The registration fee for the meeting is $55. It covers attendance to presentations, the social Wednesday evening, lunch on Thursday, two continental breakfasts, an afternoon food break, and the Banquet. Registration fee without the banquet is $40. Prior to the banquet there will be a social with a cash-bar. Dr. John Tester, Professor Emeritus, University of Minnesota, will speak after the dinner. His talk is entitled "10,000 years and 50 miles: a Minnesota Odyssey." It should be a very interesting presentation. The Awards Ceremony and Fund Raiser will be held afterwards. Chapter dues can also be paid at the meeting if you haven't done so already. Please register by January 12. Registration fee after January 12 is $65.

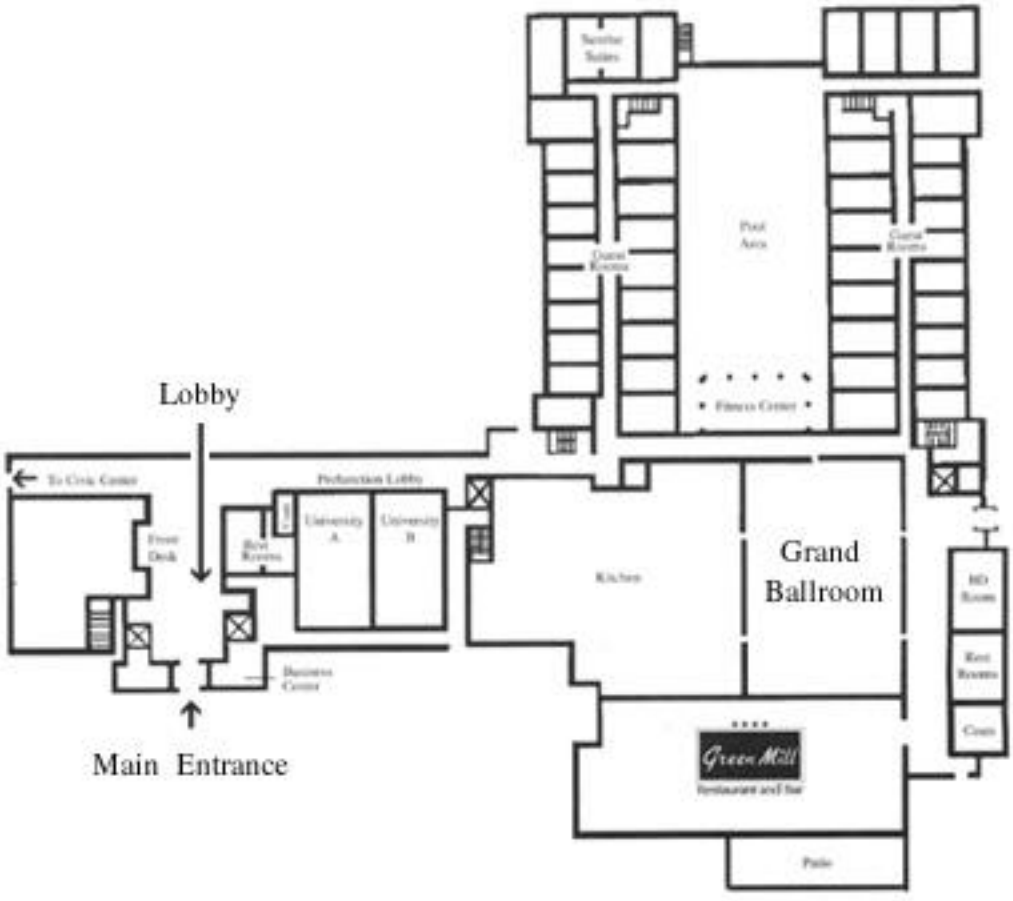
Map of St. Cloud



Parking map




Map of Kelly Inn



# Annual meeting fisheries-related abstracts

The following list includes most of the fisheries-related abstracts that will be presented at the annual meeting. Please contact Mark Hove (Mark.Hove@fw.umn.edu) if you have any questions.

### CATCHMENT AND RIPARIAN SCALE INFLUENCES ON STREAMS IN SOUTHEASTERN MINNESOTA

Kristen L. Blann and Bruce Vondracek
MN Cooperative Fish and Wildlife Research Unit, University of Minnesota, 200 Hodson Hall, 1980 Folwell Avenue, St. Paul, MN 55108.

The structure of the terrestrial landscape at multiple spatial scales influences the baseline potential habitat quality of streams. Geology and topography are often the dominant factors governing stream channel characteristics, flows, and thermal regimes, which in turn influence the suitability of streams for trout and other stream fishes. Flood frequency and intensity and sedimentation, which influence reproductive success of wild trout, are also affected by land use and vegetative cover at the scale of both the riparian ecotone and the catchment. We analyzed Minnesota Department of Natural Resources stream survey data on presence/absence of trout and other species in relation to topography, land use, geology, and soil at multiple spatial scales to identify patterns accounting for differences in the distribution of young-of-year trout, trout, and other coldwater stream fish. Landscape characteristics at the cumulative catchment, catchment, cumulative 100m riparian buffer, and 100m riparian buffer accounted for 20-40% of variance in coldwater fish community metrics in redundancy analyses (RDAs), and the majority of models were highly significant (alpha<0.05). While several landscape variables were consistently associated with fish metrics indicating positive or negative habitat quality, few individual variables were significant in ordinations. Land use variables added little additional variance to ordinations where topographic and geologic variables were included. Logistic regression analysis yielded highly significant models for the prediction of presence of brook trout and brook trout young-of-year, as well as classification status of streams as coldwater or warmwater. Slope, gradient, bedrock sedimentary associations, and percent forest were positive predictors of coldwater streams and presence of age-1+ trout, while percent urban and cultivated land use were negative at multiple scales, most notably at the riparian buffer scale. Among coldwater streams, relationships between gradient, percent forest, and geology and age-1+ trout were notably reversed for young-of-year trout.

### AN ENVIRONMENTAL ASSESSMENT TOOL FOR PRIVATE AQUACULTURE IN THE GREAT LAKES BASIN

Deborah J. Brister and Anne R. Kapuscinski
University of Minnesota, Department of Fisheries and Wildlife, 200 Hodson Hall, 1980 Folwell Avenue, St. Paul MN 55108-6124. Phone 612-625-3183 e-mail djb@fw.umn.edu

An increasing interest in aquaculture development in the Great Lakes region has led to the development of an aquaculture assessment tool that addresses potential problems associated with the siting of an aquaculture facility in the Great Lakes. With over 1200 aquaculture facilities in the Great Lakes basin, regulated differently by 2 countries, 1 province, 8 states and multiple tribal agencies, aquaculture management can become a contentious issue between jurisdictions. To assist in identifying key issues of concern, possible hazards and risk management recommendations, we created an aquaculture environmental assessment tool. Through a series of carefully worded questions, users are systematically guided through an assessment pathway aided by supporting text and summary documentation that provides transparency in the decision-making process.

### SPAWNING INTERACTIONS OF HATCHERY AND NATURALIZED ANADROMOUS FORM RAINBOW TROUT *Oncorhynchus mykiss* IN A LAKE SUPERIOR TRIBUTARY

Tracy L. Close
Minnesota Department of Natural Resources, Section of Fisheries, 5351 North Shore Drive, Duluth, MN 55804. Phone 218.723.4785 e-mail tracy.close@dnr.state.mn.us

Two strains of rainbow trout *Oncorhynchus mykiss* are managed in the Minnesota waters of Lake Superior. Abundance of the naturalized and self-sustaining steelhead strain has declined since a hatchery strain called "kamloops" was introduced in the 1970s. There are several possible causes for the decline, but hybridization of the two strains is suspected of contributing to the steelhead decline. Forty-six steelhead and kamloops spawners with strain specific homozygous alleles at the IDH-2 locus were radio tagged and stocked into a 1,200 m study reach to observe movements to spawning areas, observe spawning interactions, and to measure juvenile production and survival. Spawners of both strains distributed in the reach and most spawners remained in the study reach long enough to spawn. Young-of-the-year (YOY) densities were low in the fall when 44 hybrid and 13 pure strain steelhead YOY were captured.

Seven hybrids and six steelhead were captured one year later. It was not possible to determine how many spawning pairs produced the captured hybrids, thus the apparent difference in overwinter survival may have been a parental effect and not a strain effect. We now know that viable hybrids can be produced in the wild and that they can survive North Shore stream winters. If appropriate non-lethal genetic markers can be identified, additional work is needed to measure juvenile kamloops and hybrid survival in the wild, the extent of past hybridization, and the practicality of genetically rehabilitating the steelhead stock.

## THE EFFICACY OF MUSSEL RELOCATION AS A RESOURCE MANAGEMENT TOOL: AN EXPERIMENT IN THE ST. CROIX RIVER

Leda A. Cunningham, Daniel J. Hornbach, Mark C. Hove
Macalester College, Biology Department, 1600 Grand Avenue, Saint Paul, MN 55105. Phone (651) 696-6827 e-mail Mark.Hove@fw.umn.edu

Increasing threats to the native mussel community in the St. Croix River (*e.g.* bridge construction, zebra mussel outbreaks) make it necessary to study the efficacy of relocating mussels to less-threatened parts of the river. To determine the effects of relocation on mussel growth and survival a three-year *in situ* experiment was conducted at Wild River State Park, Minnesota. In 1997 a 25 m2 study grid containing 25 cells was placed near the confluence of the St. Croix and Sunrise rivers (reference site), and another was placed at the eastern boat launch at Wild River State Park (relocation site). Each cell was randomly assigned one of the following treatments: (1) double resident mussel density, (2) addition of 10 pimplebacks, (3) addition of 10 spikes, (4) addition of 10 pocketbooks, and (5) control (no manipulation occurred during the first year). In 1997 mussels were collected from the reference site, placed into study grids, and individuals from the first four treatments were measured, weighed, and marked. In 1998 and 1999 mussels were measured and weighed. Those found without a number were recorded as "new" and marked, those missing from the 1998 census were logged as "missing", and the rest were logged as "recovered", "control", or "dead" as applicable to their status. Preliminary examination of data indicates no difference in growth or mortality between treatments. Mortality was low (5 %) compared to similar studies (Cope and Waller 1995). Results suggest that relocating mussels to similar habitats may be an effective strategy for conserving mussel populations living in potentially harmful parts of the St. Croix River.

## DISTRIBUTION, HABITAT, AND ABUNDANCE OF THE ENDANGERED TOPEKA SHINER (*Notropis topeka*) IN MINNESOTA

Shawn P. Dahle[1] and Jay T. Hatch[2]
1-Department of Fisheries and Wildlife and Bell Museum of Natural History, University of Minnesota, Saint Paul, MN 55108. Phone 612-624-7220 e-mail spd@fw.umn.edu
2-General College and Bell Museum of Natural History, University of Minnesota, Minneapolis, MN 55455. Phone 612-625-9346 e-mail hatch001@tc.umn.edu

From May 1997 to October 1999, we examined the distribution, habitat, and abundance of Topeka shiners in the Missouri River drainage of southwestern Minnesota. We discovered Topeka shiners at 62 of the 126 locations sampled throughout the Missouri River drainage. The species was still extant at seven of the 12 historical locations sampled. We also discovered that Topeka shiners exist, often abundantly, in "off-channel habitats" (*e.g.*, oxbows, intermittent tributary pools, and closed-basin ponds). We analyzed the relative abundance of Topeka shiners at four off-channel - main channel pairs to determine if a relationship exists between habitat type and abundance. Using contingency table analysis of our catch data, we determined that Topeka shiner abundance is significantly higher in the off-channel habitats compared to their adjacent main channel stream segments. Mark-recapture studies conducted in mid July revealed adult population sizes of 306 (238, 394) in a tributary of Elk Creek and 203 (123, 362) in Mound Creek, Blue Mound State Park. These estimates represent annual lows in the adult's abundance due to the coincidental timing of natural adult mortality with our estimate. By marking shiners with three different colors in three run-riffle sequences in Mound Creek, we were able to determine that, in the week between marking and recapture, Topeka shiners moved short distances (max.< 300 m), both upstream and down, across small riffles between pools. Further research will be necessary to better understand the habitat requirements, population dynamics, and vagility of this endangered minnow.

## FOOD HABITS OF AGE-1 AND AGE-2 YELLOW PERCH IN FOUR WEST-CENTRAL MINNESOTA LAKES

Howard G. Fullhart[1], Bradford G. M. Parsons[2], and David W. Willis[1]
1-Department of Wildlife and Fisheries, PO Box 2140B, South Dakota State University, Brookings, SD 57007. Phone 605-688-6121 e-mail David_Willis@sdstate.edu
2-Minnesota Department of Natural Resources, 1110 N. Lakeshore Drive, Glenwood, MN 56334, 320-634-4573

We monitored the seasonal food habits of juvenile yellow perch *Perca flavescens* in four west-central Minnesota lakes, focusing especially on perch consumption of other fishes. Age-1 and age-2 yellow perch, which ranged from 70 to 120 mm (total length) in all four study lakes, were collected from May through October, 1999. Prey selection varied seasonally. In May, yellow perch primarily consumed cladocerans, chironomids, amphipods, and emphemeropterans. As summer progressed, the consumption of fish as prey increased. During May and June, the primary two prey fishes consumed were johnny darter *Etheostoma nigrum* and the brook stickleback *Culaea inconstans*. In July and August, centrarchids were the primary fishes being consumed by yellow perch, while chironomids and trichopterans were the primary macroinvertebrate prey organisms. In late October, the diet of age-1 and age-2 yellow perch consisted almost entirely of centrarchids and corixids. Nearly all yellow perch contained at least a few zooplankton; however, only 90-mm and smaller perch relied on zooplankton as a primary food source. Overall the consumption of fish as prey by yellow perch was lowest during the spring and early summer samples, likely because macroinvertebrates and zooplankton were more abundant than prey fishes at this time of year. Ultimately, we hope that results from this study can improve our understanding of the role of yellow perch predation on fish communities in Minnesota lakes.

## USE OF POPULATION STRESS INDICATORS TO EVALUATE WALLEYE EXPLOITATION IN MINNESOTA'S LARGE LAKES

R. Scott Gangl[1] and Donald L. Pereira[2]
1-University of Minnesota, Department of Fisheries and Wildlife, 200 Hodson Hall, 1980 Folwell Ave., St. Paul, MN 55108. Phone 612-624-3245 e-mail rsg@fw.umn.edu
2 -Minnesota Department of Natural Resources, 1200 Warner Road, St. Paul, MN 55106. Phone 651-772-7962 e-mail don.pereira@dnr.state.mn.us

Identification of stress in fish populations due to high exploitation is necessary for active management procedures. We analyzed biological characteristics of walleye populations in Minnesota's ten largest lakes and navigational Pool 2 of the Mississippi River to determine their usefulness for indicating exploitation stress levels. Walleye populations used for this study had a wide spectrum of exploitation, ranging from unexploited (catch and release only) to over-exploited (the population recently collapsed). We used summary statistics and regression techniques to analyze population assessment data for trends in relative abundance, growth, age structure, mortality rates, and maturity schedules. Benchmark values were estimated for each index to correspond to safe levels of exploitation. Results indicate that some indices may be more sensitive than others. Relative abundance coefficient of variation may not be useful due to influences other than exploitation. Growth appears to be very sensitive to exploitation, although a time lag between over-exploitation and a visible growth response indicates that increased growth may not be detected until after a population has sustained signifcant stress from high exploitation. Top candidates for indices of exploitation include those related to reproduction and the ability of the stock to replace itself, such as age diversity of spawners, maturity schedules, and spawning stock biomass. This study demonstrates the need for improved methods of estimating mortality rates, especially fishing mortality.

## FOOD HABITS OF THE ENDANGERED TOPEKA SHINER (*NOTROPIS TOPEKA* ) IN MINNESOTA.

Jay T. Hatch[1] and Shawn P. Dahle[2]
1-General College and Bell Museum of Natural History, University of Minnesota, Minneapolis, MN 55455. Phone 612-625-9346 e-mail hatch001@tc.umn.edu
2- Department of Fisheries and Wildlife and Bell Museum of Natural History, University of Minnesota, Saint Paul, MN 55108. Phone 612-624-7220 e-mail spd@fw.umn.edu

Two food studies were conducted on Topeka shiners collected in the Rock River drainage of Minnesota in 1997 and 1998. In the preliminary 1997 study, we examined the total gut contents of 65 adults that were collected from six locations. We were able to distinguish 25 different food categories that included insects, microcrustaceans, hydracarina, bryozoans, oligochaetes, sphaeriids, larval fish, algae, vascular plant matter and organic detritus. Because not all food items were countable, we were unable to quantify the relative proportion that each food item contributed to the diet. In the second, larger study we quantified all food items volumetrically and looked for seasonal changes in the diet (April-October) at two locations. At Ladd's Pond (a closed-basin farm pond), we distinguished 16 different food categories from the guts of 72 adults. *Bosmina* (29.4%), miscellaneous vascular plant matter (18.5%), Chironomidae (18.1%), detritus/sand (13.5%), and *Ceriodaphnia* (8.4%) accounted for 87.9% of the gut contents. In Mound Creek (Blue Mound State Park), we distinguished 26 food categories from the guts of 137 adults. Chironomidae (31.1%), *Daphnia* (19.5%), *Bosmina* (18.8%), Copepoda (8.4%), and detritus/sand (6.3%) accounted for 84.1% of the gut contents. The relative contribution to the diet of each of these food items varied markedly over the season. We conclude that Rock River drainage populations of Topeka shiners are opportunistic omnivores that feed on benthic, planktonic and nektonic prey.

## HABITAT USE AND RECRUITMENT PROCESSES OF WALLEYE AND SAUGER IN POOL 4 OF THE UPPER MISSISSIPPI RIVER

Brian S. Ickes[1], Donald L. Pereira[2], and Allen G. Stevens[3]
1-University of Minnesota, Department of Fisheries and Wildlife, 200 Hodson Hall, 1980 Folwell Ave., St. Paul, MN 55108. Phone (651) 793-0783 e-mail bi@fw.umn.edu
2-Minnesota Department of Natural Resources, Section of Fisheries, 1200 Warner Road, St. Paul, MN 55106. Phone 651-772-7962 e-mail don.pereira@dnr.state.mn.us
3- Minnesota Department of Natural Resources, Section of Fisheries, 500 Lafayette Road, St. Paul, MN 55108. Phone (651)297-3287 al.stevens@dnr.state.mn.us

A recent biotelemetry study of Pool 4 walleye (*Stizostedion vitreum*) and sauger (*S. canadense*) seasonal distribution and habitat use demonstrated that Pool 4 walleye and sauger spatially partition their spawning habitat, with implications for year class formation and stock dynamics. We investigated the role that species-specific spawning habitat selection has in year class formation by analyzing stock recruitment data from a continuous 35-year stock assessment program. Specific objectives included identifying recruitment processes in these populations, quantifying the role of external environmental variables in determining recruitment, and identifying potential recruitment bottlenecks that could be used to forecast recruitment. We fit standard Ricker stock recruitment curves, adding significantly related external independent variables (biotic and abiotic) during model development. Density dependence was found for both walleye and sauger. External abiotic variables contributed significantly to model development and accounted for a majority of the variability in the recruitment processes. No significant interaction between walleye and sauger (*ie*. predation) was found. Biotic variables were found to be insignificant determinants of Pool 4 walleye and sauger recruitment. The magnitude, timing, and duration of spring water levels appears to be the single most important determinant of walleye and sauger recruitment in Pool 4.

## ATTITUDES OF MINNESOTA RESIDENTS ABOUT FISHERIES ISSUES

Peter C. Jacobson[1], Tracy Close[2], Charles Anderson[3], and Timothy Kelly[4]
1- Minnesota Department of Natural Resources, Section of Fisheries, PO Box 823, Detroit Lakes, MN 56501. Phone (218) 847-1579 e-mail peter.jacobson@dnr.state.mn.us
2- Minnesota Department of Natural Resources, Section of Fisheries, 5351 North Shore Drive, Duluth, MN 55804. Phone (218) 723-4785
3- Minnesota Department of Natural Resources, Section of Fisheries, 500 Lafayette Road, St. Paul, MN 55155. Phone (651) 296-0794
4- Minnesota Department of Natural Resources, Section of Fisheries, 500 Lafayette Road, St. Paul, MN 55155, Phone (651) 296-4892

Attitudes of Minnesota residents (anglers and nonanglers) concerning fisheries issues were analyzed using data from a 1998 statewide mail survey. The analysis explored the influence that characteristics such as geographical location of residence, angling participation, lakeshore ownership, age, gender, income, and education have on resident's attitudes towards habitat protection, fishing tournaments, Minnesota DNR performance, and other fisheries management issues. Principle Components Analysis was used to define related groups of questions and to produce attitude scores that could be quantitatively analyzed. Several significant relationships between resident characteristics and attitudes were detected. For example, Metro people (Minneapolis, St. Paul and suburbs) were more likely to favor management for large fish, less likely to advocate fish stocking, more likely to support progressive fisheries management activities, placed a higher value on aquatic habitats, more satisfied with the performance of the Minnesota DNR Section of Fisheries, and supported more funding for the Section. This support for progressive fisheries management from Metro residents was encouraging in light of recent trends of increased urbanization within the state of Minnesota. The lesser support for habitat protection and progressive fisheries management in the non-Metro regions may be a manifestation of a general attitude of human beings to appreciate natural resources less the more they have.

## LONG TERM CHANGES IN MUSSEL POPULATIONS OF THE ST. CROIX RIVER

Thomas W. Hermanson, Leda A. Cunningham, Katie G. Esse, Jensen C. Hegg, Mark C. Hove, Jennifer L. Mann, and Daniel J. Hornbach
Macalester College, Biology Department, 1600 Grand Avenue, St. Paul, Minnesota 55105. Phone (651) 696-6827 e-mail Mark.Hove@fw.umn.edu

Population dynamics of freshwater mussels (Unionidae) were observed since 1991 at three locations in the St. Croix River. Mussel communities were assessed quantitatively and qualitatively to calculate density, species richness, and age structure to identify long-term

trends. Mussels and substrate were collected from at least 100 0.25 m2 quadrats at each location. Substrate was separated into 5 size classes and all mussels were identified and measured. From these measurements, population density and community diversity were calculated at each location and compared to past sampling years. At Franconia mussel density decreased from 10.44 mussels/m2 in 1991 to 9.76 mussels/m2 in 1995, and 4.52 mussels/m2 in 1999. Species richness decreased from 26 species in 1991 to 19 species in 1995, and 15 species in 1999. One endangered winged mapleleaf mussel was found in quantitative samples in 1995. At Wild River State Park, mussel density decreased from 37.36 mussels/m2 in 1993 to 29.56 mussels/m2 in 1996 continuing to decline to 21.08 mussels/m2 in 1999. Species richness decreased from 21 species in 1993 to 18 species in 1996, and remained the same in 1999. At Prescott, Wisconsin mussel density decreased from 7.8 mussels/m2 in 1994 to 5.64 mussels/m2 in 1999, while species richness declined from 21 to 18 species. One Higgins' Eye (*Lampsilis higginsi*) was found in both 1994 and 1999. In addition we found two invasive bivalve species at Prescott: one live zebra mussel attached to an threeridge (*Amblema plicata*) as well as one Asian clam (*Corbicula fluminea*.). We will statistically analyze these data to determine if these trends are significant and warrant management action.

## OYTETRACYCLINE AND GENETIC MARKING TO EVALUATE WALLEYE STOCKING SUCCESS IN THE RED LAKES

D. Logsdon[1] and L. Miller[2]
1- Minnesota Department of Natural Resources, Section of Fisheries, P.O. Box 86, Waterville, MN 56096. E-mail dale.logsdon@dnr.state.mn.us
2-Department of Fisheries and Wildlife, University of Minnesota, St. Paul, MN 55108. E-mail lmm@fw.umn.edu

Fluorescent and genetic marker techniques for identifying stocked fish are being deployed to provide data for evaluating the success of stocking walleye in the Red Lakes. Approximately 43 million Pike River strain walleye fry were stocked during the period of May 2 though May 18, 1999. Fluorescent marks were produced by immersion of the fry in a solution of 700 mg/l oxytetracycline (OTC) for 6 hours immediately preceding stocking. Samples of OTC treated fry were also held in experimental ponds for validation of the marking technique. Pond-fish subsequently inspected during blind trials with untreated controls were correctly classified as either OTC treated or untreated with 100% success. Initial survival of stocked walleye fry in Red Lakes appears good. The mean catch of 49.4 YOY walleyes per seine haul is the highest in over a decade and 86% of the 360 walleye inspected exhibited a flourescent mark. To provide a second means of evaluating stocking success, we are using a mixed-stock analysis approach with genetic markers. We have established baseline allele frequencies for eight microsatellite DNA markers in Red Lake and Pike River adult walleye. Unknown offspring can be assigned to a source population based on their genotypes using maximum-likelihood methods. Power analyses indicated that assignment error should be less than 10%. An initial test using known Pike River fish resulted in less that 5% misclassification. We will soon be assessing post-stocking samples from the Red Lakes to compare with OTC results. If the genetic and OTC markers provide comparable estimates for young fish, then genetic markers can be used as the fish age and the otolith marks potentially become unreliable.

## JUVENILE AND LARVAL FISHES OF THE RED RIVER OF THE NORTH - YEAR 2

Maija Meneks and Bruce Vondracek
University of Minnesota, 1980 Folwell Avenue, St. Paul, MN 55108. Phone (651) 645-9007 e-mail mene0019@tc.umn.edu

We sampled sites in the Buffalo and Sand Hill River watersheds of the Red River of the North to acquire baseline data on larval and juvenile fishes within channelized and unchannelized systems. This is the second year of data collection. Seine and drift net collections, temperature, velocity, and dissolved oxygen were gathered from April through August 1999. Preliminary analysis of samples indicate omnivorous feeding guilds and guilds tolerant to habitat degradation dominate at channelized sites; insectivorous feeding guilds and those of intermediate tolerance dominate unchannelized areas. Reproductive guilds of simple phyto-lithophils and simple lithophils are prominent at unchannelized sites while simple phytophils are found in channelized areas. Similar guild trends are seen in both whole-community and larvae-only analysis. Fathead minnows dominate samples from channelized sites. 1998 data compared to 1999 are similar in respect to tolerance and feeding guilds, and fathead minnow dominance. Continuing analysis will include examination of abiotic variables and integration of field data from 1998 with 1999.

## SURVIVAL TRAITS OF NATURALIZED, HATCHERY, AND HYBRID STRAINS OF ANADROMOUS RAINBOW TROUT DURING EGG AND FRY STAGES

Mary T. Negus
Minnesota Department of Natural Resources, Section of Fisheries, 5351 North Shore Drive, Duluth, Minnesota 55804. Phone (218) 723-4785 e-mail mary.negus@dnr.state.mn.us

Two strains of anadromous rainbow trout *Oncorhynchus mykiss* that currently inhabit the Minnesota waters of Lake Superior may have the potential to hybridize, which could compromise the genetic integrity of the naturalized steelhead population. Both strains are supplemented by annual stocking, despite the fact that the steelhead population reproduces naturally. Egg viability and fry behavior experiments were undertaken to evaluate the potential for hybridization and to provide information for future management of the two strains. Kamloops eggs were slightly smaller, but sizes overlapped substantially with steelhead egg sizes. Kamloops eggs displayed higher mortality from spawning to hatch than steelhead eggs. Steelhead fry exhibited a greater fright response (wariness) than kamloops fry when startled by movement over their tanks. Hybrid egg survival and wariness traits were intermediate to those of the pure strains, but more closely resembled those of the maternal strain. These traits appeared to be heritable. Reevaluation of steelhead and kamloops management will be necessary in the future, taking into account the popularity of the kamloops fishery and the potential for degradation or elimination of the naturalized steelhead strain.

## THERMAL MARKING OF OTOLITHS IN LAKE TROUT SAC FRY

Mary T. Negus
Minnesota Department of Natural Resources, Section of Fisheries, 5351 North Shore Drive, Duluth, Minnesota 55804. Phone (218) 723-4785 e-mail mary.negus@dnr.state.mn.us

The ability to distinguish hatchery produced lake trout *Salvelinus namaycush* from their wild counterparts is essential for evaluation of restoration efforts in Lake Superior. However, when early life history stages are stocked, conventional external marking procedures are inappropriate. The use of thermal marks in otoliths has become an accepted procedure for Pacific salmon *Oncorhynchus* spp. fry, but knowledge of the technique with lake trout fry is limited. Several thermal marking regimes with lake trout sac fry were evaluated by varying the number, range, duration, and spacing of temperature pulses. Pulses produced individual bands on otoliths that together comprised the mark. Mark visibility varied within treatments, but in general, the highest quality marks were achieved when fry were subjected to pulses of 10 °C or higher for 8 h or more on alternate days. Precision in preparing otoliths for examination influenced mark visibility, but the better marks were visible with less preparation. Marked fish are currently being maintained in our hatchery until maturity, and mark recognition has been 100% for up to 7 years. Nearly 1.5 million marked lake trout sac fry were released on a reef in Lake Superior during the 3 year period 1994-1996, and mark evaluation of lake trout captured in this location will be attempted in the future.

## INFLUENCE OF WALLEYE FINGERLING PRODUCTION ON WETLAND COMMUNITIES

Jeff Reed
Minnesota Department of Natural Resources, Section of Fisheries, 23070 North Lakeshore Drive, Glenwood, MN 56334

The effects of walleye fingerling production on macroinvertebrates, zooplankton, fish, plant communities, and limnological parameters of six prairie wetlands were examined. Following two years of pre-treatment data collection, walleye fry were introduced into three of the six wetlands. Numerous significant changes in the macroinvertebrate communities were observed, but none could be attributed to the presence or absence of walleye. Within pond differences were also common, but were as likely to occur in reference ponds as in treatment ponds. Walleye consumed invertebrates throughout the summer indicating the possibility of competition with waterfowl using these areas for brood rearing or migratory staging. With the exception of one pond which was fishless prior to walleye introduction, there was no evidence that the introduction of walleye reduced macroinvertebrate numbers. Walleye did suppress fathead minnow populations in two of the ponds following a winterkill in 1996-1997.

## RECREATIONAL DARKHOUSE SPEARING FOR NORTHERN PIKE IN MINNESOTA: HISTORICAL CHANGES IN EFFORT AND HARVEST, AND COMPARISONS WITH ANGLING

Rodney B. Pierce and Mark F. Cook
Minnesota Department of Natural Resources, Section of Fisheries, 1201 East Highway 2, Grand Rapids, MN 55744. Phone (218) 327-4430 e-mail rod.pierce@dnr.state.mn.us

A traditional form of northern pike *Esox lucius* harvest during winter is darkhouse spearing through the ice. Using a comprehensive evaluation of creel surveys and license sales in Minnesota, we document a long-term decline in this unique sport fishery. The decline in recreational spear fishing effort cannot be blamed on catch rates because spearing catch rates have not changed perceptibly over time. Catch rates for spearing (mean = 0.175 fish/h) are similar to harvest rates by anglers that are targeting northern pike. Conflicts between spearers and anglers have led to questions about relative harvests by each group and their effects on northern pike populations. Creel survey data since 1980 show that summer and winter angling account for most of the northern pike harvest. Spearing accounted for

15% of the average yield of northern pike by number, but spearing is selective for the larger fish. In comparison with population estimates, spearing removes a small proportion of the total population and biomass of northern pike, but an increasing proportion of fish with increasing size. Recreational angling, by comparison, removes an even greater proportion of all fish sizes in a population. Management designed to improve the size structure of northern pike populations will need to be directed at reducing harvest by all methods.

## FISH EFFECTS ON SHREDDERS AND LEAF LITTER DECAY IN A COLDWATER MINNESOTA STREAM

Carl R. Ruetz III[1], Raymond M. Newman[2], and Bruce Vondracek[3]
Minnesota Cooperative Fish and
1 -Wildlife Research Unit, Department of Fisheries and Wildlife, University of
Minnesota,1980 Folwell Ave., St. Paul, MN 55108. Phone (612) 624-3785 e-mail crr@fw.umn.edu
2 -Department of Fisheries and Wildlife, University of Minnesota, 1980 Folwell Ave., St. Paul, MN 55108. Phone (612) 625-5704 e-mail rmn@fw.umn.edu)
3 -Minnesota Cooperative Fish and Wildlife Research Unit, Biological Resources Division, U.S. Geological Survey, Department of Fisheries and Wildlife, University of Minnesota, 1980 Folwell Ave., St. Paul, MN 55108. Phone (612) 624-8748 e-mail bcv@fw.umn.edu

We assessed the indirect effects of fish (*Cottus cognatus*, *Oncorhynchus mykiss*, *Salmo trutta*, and *Salvelinus fontinalis*) on leaf litter decay in riffle habitats in Valley Creek, Minnesota. Our hypothesis was that fish would decrease the number of shredders associated with leaf packs and thus reduce leaf litter decay rates. To test this hypothesis, willow leaves (*Salix* spp.) were fastened into leaf packs (about 3 g dry mass) and placed in 10 cm2 cages (6 mm mesh) that either excluded fish (mesh on all sides) or were open to fish (upper and downstream sides without mesh). Two replicate leaf packs of each treatment level (*i.e.*, open or closed cages) were collected 0, 14, 31, 55, and 112 days after placement in three riffles. Linear regression of the natural logarithm of the proportion of leaf mass remaining on the number of days leaf packs were exposed in the stream was used to calculate decay rates (- slope). Statistical differences among decay rates were evaluated with a F-test. Decay rates were similar (0.0095/d) in two of the three riffles studied (*i.e.*, no treatment or riffle effect). In the riffle that differed, decay rates in open cages (0.013/d) were greater than closed cages (0.010/d), which contradicted our original hypothesis. However, there was a significant difference in the total number of shredders per leaf pack between open and closed cages (ANOVA, $P < 0.05$). Therefore, fish may reduce the number of shredders associated with leaf packs in Valley Creek without decreasing leaf litter decay rates.

## A SURVEY OF URBAN FISH COMMUNITIES IN LUBBOCK, TEXAS

Calub E. Shavlik[1] and Kevin L. Pope[2]
Texas Tech University, Lubbock, TX 79409
1-Phone 806/742-1981 e-mail c7sce@ttacs.ttu.edu
2-Phone 806/742-2843 e-mail kpope@ttu.edu

Twenty-three city park lakes were electrofished in June 1999 to assess the fish communities. Catch per unit effort (CPUE), size structure (proportional stock density), and condition (relative weight) were used to characterize fish populations. Fifteen species were collected; the most prevalent species were common carp *Cyprinus carpio* (21 lakes) and bluegill *Lepomis macrochirus* (19 lakes). Principal components analysis on CPUE of eight fish species was used for preliminary data exploration. Principal component 1 separated traditionally desirable (*e.g.*, largemouth bass *Micropterus salmoides*, bluegill, and gizzard shad *Dorosoma cepedianum*) and undesirable species (*e.g.*, goldfish *Carassius auratus*, white crappie *Pomoxis annularis*, green sunfish *Lepomis cyanellus*, and common carp) for water less than 45.4 hectares. Principal component 5 distinguished between trophic levels (piscivores: white crappie, green sunfish, and largemouth bass; plantivores/insectivores: common carp, gizzard shad, black bullhead *Ictalurus melas*, and goldfish). A positive relationship (Spearman rank correlation: $r=0.65$; $P=0.002$) existed between largemouth bass and bluegill CPUE, suggesting that abiotic factors (*e.g.*, habitat quality) are more important that biotic (*e.g.*, predator-prey interactions) factors. In addition, gizzard shad and green sunfish were rarely (5 of 20 lakes) found in the same water bodies and when they were present together, green sunfish CPUE was low (*i.e.*, <6/hr).

*There are two ways to become a member: (1) fill out this form and send it in with seven dollars, or (2) pay your Minnesota Chapter dues through the American Fisheries Society (the Chapter gets reimbursed).*

## Annual Meeting Pre-registration and 2000 Dues Application

2000 MN Chapter dues-Nonstudent.....$7.00 _____

2000 MN Chapter dues-Student w/web ***RYBA***.....$0.00 _____

2000 MN Chapter dues-Student w/mailed ***RYBA***.....$7.00 _____

Annual Meeting Pre-registration with Banquet.....$55.00 _____
(Registration fee after January 12 is $65)

Annual Meeting Pre-registration without Banquet.....$40.00 _____

Total Enclosed..... _____

Send Check (pay to the order of: Minnesota Chapter AFS) and this form to:

**Tim Brastrup**
**4121 Cedardale Lane S.**
**Baxter, MN 56425**

Name: _____

e-mail: _____

Address: _____

_____

_____

_____

Phone: _____

Are you a member of AFS (parent society)?_____ yes _____ no.
Membership Number_____
(AFS membership number is located on your *Fisheries* mailing label)

Affiliation: _____
(DNR, Federal Government, Academic, EPA, Tribal, Student, Retired, DOT, DAG, PCA, or Private)

Check if you rather receive ***RYBA*** electronically (students w/web ***RYBA*** must receive the newsletter through the Chapter website; www.fw.umn.edu/mnafs): _____

## 1999-2000 Minnesota Chapter of the American Fisheries Society

### Chapter Officers

| | | | |
|---|---|---|---|
| President | Paul Radomski | paul.radomski@dnr.state.mn.us | 218.828.2246; fax 218.828.6022 |
| President-elect | Mark Hove | Mark.Hove@fw.umn.edu | 612.624.3019; fax 612.625.5299 |
| Past President | Bruce Vondracek | bcv@finsandfur.fw.umn.edu | 612.624.3421; fax 612.625.5299 |
| Secretary-Treasurer | Tim Brastrup | tim.brastrup@dnr.state.mn.us | 218.828.2552; fax 218.828.6022 |

### Excom Members

| | | | |
|---|---|---|---|
| Minnesota DNR | Jeff Reed | fishgeek@runestone.net | 320.634.4573 |
| Federal | Chantel Cook | ccook/r9_chippewa@fs.fed.us | 218.335.8600 |
| Academic | Andrew Simons | asimons@fw.umn.edu | 612.624.6292 |
| Open | Brian Borkholder | bribornr@fdl.cc.mn.us | 218.879.3919 |

### Committee Chairs

*Standing Committees*

| | | | |
|---|---|---|---|
| Awards | Julie Westerlund | julie.westerlund@dnr.state.mn.us | 651.772.7938 |
| Issues | *open* | ---------- | ---------- |
| Long Range Planning | Henry VanOffelen | henry.vanoffelen@dnr.state.mn.us | 218.847.1579 |
| Membership | Doug Kingsley | doug.kingsley@dnr.state.mn.us | 218.732.4153 |
| Nominations | Melissa Drake | melissa.drake@dnr.state.mn.us | 651.772.7966 |
| Public Education | John Hiebert | john.hiebert@dnr.state.mn.us | 612.675.3301 |
| Resolutions | Todd Marwitz | todd.marwitz@dnr.state.mn.us | 651.345.3365 |
| Students | Carl Ruetz | crr@fw.umn.edu | 612.624.3785 |

*Special or Ad Hoc Committees*

| | | | |
|---|---|---|---|
| Fishing Round Table Delegate | Mark Hove | Mark.Hove@fw.umn.edu | 612.624.3019 |
| Fund Raising | Tom Burri | tom.burri@dnr.state.mn.us | 218.286.5220 |
| | Henry VanOffelen | henry.vanoffelen@dnr.state.mn.us | 218.847.1579 |
| FWLA Delegate | Bruce Vondracek | bcv@finsandfur.fw.umn.edu | 612.624.3421 |
| | Don Pereira | don.pereira@dnr.state.mn.us | 651.772.7962 |
| Historian | *open* | ---------- | ---------- |
| Continuing Education | Laurie Sovell | laurie.sovell@pca.state.mn.us | 507.389.1925 |
| | Jerry Grant | gerold.grant@dnr.state.mn.us | 218.828.2665 |
| Procedure Manual | Brad Parsons | fishgeek@runestone.net | 320.634.4573 |
| Rivers and Streams NCD TC rep | Dennis Topp | ourfish@means.net | 218.634.2522 |
| ***RYBA*** Editor - Newsletter | Paul Radomski | paul.radomski@dnr.state.mn.us | 218.828.2246 |
| Salmonid NCD TC rep | Pat Rivers | pat.rivers@dnr.state.mn.us | 651.345.3365 |
| Webmaster | Jingyin Li | jyl@fw.umn.edu | 612.624.2720 |

**Internet:** Minnesota Chapter, www.fw.umn.edu/mnafs; North Central Division, www.fw.umn.edu/ncdafs; American Fisheries Society, www.fisheries.org. All past issues of ***RYBA*** can be found at the Chapter website.

Minnesota Chapter AFS
Attn: Paul Radomski
1601 Minnesota Drive
Brainerd, MN 56401



***Annual Meeting Issue - January 19-21, 2000***